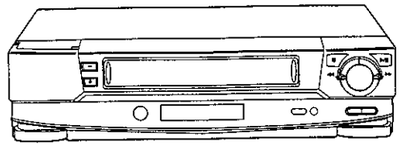
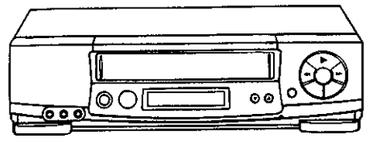
HITACHI

SERVICE MANUAL



VT-UX6430A



VT-FX6410A

TK | No.4811E

VT-UX6430A
VT-FX6410A

US MECHANISM

This model uses a US Mechanism. Refer to the following manuals for the US Mechanism.

Manuals to be referred.

Name of manual	Manual No.
US Mechanism	4527E

VHS

This video deck is a VHS type video recorder. For proper operation, only the VHS type cassette must be used.

VCR Plus+®

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO CASSETTE RECORDER

December 1998

AV Consumer Products Division, Tokai

SAFETY PRECAUTIONS

NOTICE:
Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

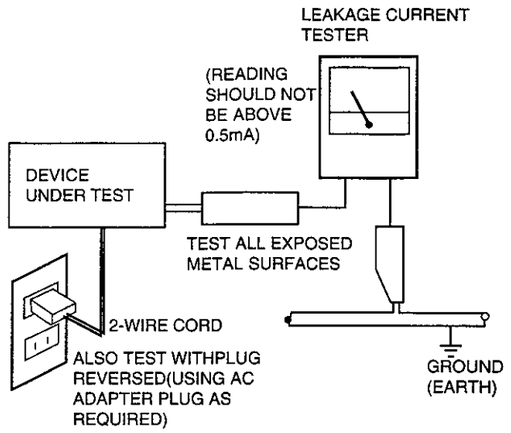
1. When replacing a chassis in the instrument, all the protective devices must be put back in place, such as barriers, non-metallic knobs, adjustment and compartment covers/shields, isolation resistors/capacitors, etc.
2. When service is required, observe the original lead-ress. Extra precautions should be taken to assure correct lead dress in the high voltage circuit.
3. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacturer's. Furthermore, where a short-circuit has occurred, replace those components that indicate evidence of overheating.
4. Before returning an instrument to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the instrument by the manufacturer has become defective or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

With the AC plug removed from the AC120V, 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC500V), connect one lead to the jumpered AC plug and touch the other lead to exposed metal parts (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3 Mohm and a maximum resistor reading of 5 Mohm. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a AC120V, 60Hz outlet (do not use an isolation transformer for this check).
Turn the AC power switch on. Using a "Leakage Current Tester", measure for current from all exposed metal parts of the cabinet (antennas, screwheads, metal overlays, control shaft, etc.), particularly an exposed metal part having a return path to the chassis, to a known ground (earth) (water pipe, conduit, etc.). Any current measured must not exceed 0.5 mA.


LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5mA)
DEVICE UNDER TEST
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
ALSO TEST WITHPLUG REVERSED(USING AC ADAPTER PLUG AS REQUIRED)
GROUND (EARTH)

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE UNIT TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual. Electrical components having such features are identified by marking with a ⚠ on the schematics and the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards. Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies for, HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.

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CHAPTER 1 GENERAL INFORMATION

1. Specifications

Format:	VHS
Video Signal System:	NTSC color EIA standard
Record/Playback System:	Video: 4 Heads Audio: VHS Hi-Fi stereo record/playback system
Tape Speed:	33.35mm/sec(SP), 16.67mm/sec(LP)(playback only), 11.12mm/sec(EP)
RF Input:	UHF/VHF75 ohm
Tuner:	USA: 181 channel tuning ability* (125 cable channels) Canada: 178 channel tuning ability* (122 cable channels)
Type:	Auto programming frequency synthesis
Power Input:	AC120V 60Hz
Power Consumption:	18W norminal [VT-UX6430A] 16W norminal [VT-FX6410A]
Cabinet Size:	17-1/8"(W) x 3-7/8"(H) x 11-1/8"(D) 43.5cm(W) x 9.9cm(H) x 28.2cm(D) [VT-UX6430A]
	14-15/16"(W) x 3-11/16"(H) x 10-13/16"(D) 38.0cm(W) x 9.3cm(H) x 27.5cm(D) [VT-FX6410A]
Weight:	8.8lbs. (4.0kg) [VT-UX6430A] 7.7lbs. (3.5kg) [VT-FX6410A]
Storage Temperature:	-4°F to 131°F
Operating Temperature:	41°F to 104°F
Accessories:	1 coaxial cable 1 remote control unit 2AA batteries

* Check your cable company's compatibility requirements.
For information about how to obtain there and other HITACHI accessories, please call HiTRON, Inc. TOLL FREE at 1-800-995-4500(in the continental United States).
For ALASKA and HAWAII, please contact the nearest Hitachi Regional Office.
Design and specifications subject to change without notice.

2. Comparison with Previous Model

Item	VT-UX6430A/FX6410A	VT-UX625A
Video		
Video recording/playback system	VHS	VHS
Y/C separation	Comb filter (CCD)	Comb filter (CCD)
YNR (noise reduction)	Yes	Yes
CNR (noise reduction)	No	No
New sync circuit	Yes	Yes (PB only)
S-VHS quasi playback function	Yes	No
Jacks		
Video/audio inputs (rear)	1/1	1/1
Video/audio inputs (front)	1/1	1/1
Video/audio outputs (rear)	1/1	1/1
Synchro input (front)	No	No
Prog.		
VCR Plus + programming	Yes	Yes
Number of timer programs	8 programs/1 month	8 programs/1 year
Auto recording speed	No	No
Remote control		
Model	VT-RM6411A [VT-UX6430A] VT-RM6410A [VT-FX6410A]	VT-RM625A
Remote shuttle ring	No	Yes
VCR Plus + code guide channel memory	Yes	Yes
Miscellaneous		
Frame Advance playback	Yes	Yes
Slow speed	x1/7	x 1/7
Search speed	SP:x7 to x9 EP:x21 to x27	SP:x7 to x9 EP:x21 to x27
Skip at 60 sec	Yes	Yes
Shuttle ring on the VCR	Yes [VT-UX6430A only]	Yes
Cable box control	No	Yes
DSS box control	No	No
User guide display	Yes	Yes
Auto clock setting	Yes [VT-UX6430A only]	Yes
Auto install	Yes	No
Commercial Advance(CA SKIP)	No	No
Movie Advance(MA SKIP)	No	Yes
Self-diagnosis	Yes (7 modes)	Yes (7 modes)
No. of channels	181	181
Backup time	30 sec	1 hour
Mechanism		
Basic chassis type	US	US
Fast forward/rewind time(with T-120)	about 130 seconds[Full loading]	about 130 seconds[Full loading]
X260 Rewind time(with T-120)	about 83 seconds[Half loading]	about 83 seconds[Half loading]
Configuration of heads	DA4 heads + Hi-Fi	DA4 heads + Hi-Fi
	SP video : 2 [48/56µm]	SP video : 2 [48/56µm]
	EP video : 2 [19/19µm]	EP video : 2 [19/19µm]
	Audio : 2 [28/28µm]	Audio : 2 [28/28µm]
Material of heads	SP video : Ferrite	SP video : Ferrite
	EP video : Ferrite	EP video : Ferrite
	Audio : Ferrite	Audio : Ferrite
Impedance roller	No	No
Head cleaning roller	Yes [VT-UX6430A only]	Yes

3. Comparison of Main Control ICs

Function	VT-UX6430A/FX6410A	VT-UX625A
Video		
Y/chroma signal processing	JCP8017NVA (IC201)	HA118204F (IC201)
CCD 1H delay	Included in IC201	MSM7476-76MS (IC202)
FM signal processing/EQ	Included in IC201	Included in IC201
Linear Phase EQ/NAVI.data adder	----------	Included in IC201
Video AGC	Included in IC201	Included in IC201
FM audio		
Audio signal processing	AN3662FBP (IC501)	AN3962FB (IC501)
Preamp		
Video head switch	Included in IC201	HA118198F (IC1101)
Audio head amp	Included in IC501	LA7256 (IC1102)
MTS/OSD		
MTS decoder	Included in IC501	HTS7342 (IC1801)
OSD control/Sync separator/AFC	Included in IC901	Included in IC901
Servo		
Servo control	Included in IC901	Included in IC901
FG/tach amp	Included in IC901	Included in IC901
System control		
Main µP (system control µP)	HD64339NSC33 (IC901)	HD6433977SB62F (IC901)
EEPROM	S-24C02A (IC903)	AT24C02-6 (IC903)
Loading motor drive	BA6209 (IC904)	BA6209 (IC904)
Shuttle code	Included in IC901	uPD17103GS-752 (IC2701)
Timer		
Timer µP	Included in IC901	Included in IC901
Display driver	BU9716AK (IC1701)	BU9716AK (IC701)
Auto clock setting	Z86131 (IC2901) [VT-UX6430A only]	LC7455A (IC2901)
Commercial Advance		
Commercial Advance(CA-uP)	----------	CXP80712A122Q (IC4501)
Reset	----------	PST9145T (IC4502)
Sync separator	----------	MM1108XF (IC4506)
Commercial Advance EEPROM	----------	----------
Power supply		
Switching driver	STR-F6653 (IC851)	STR-F6510 (IC851)
A9V regulator	----------	----------
5V regulator	M5278L05 (IC905)	M5278L05 (IC905)

4. Tips for Servicing

4-1. How to Remove the Cassette when a Malfunction Has Occurred in the Mechanism

If a cassette is caught in the mechanism because of a malfunction in the mechanism, remove it by the following procedure.

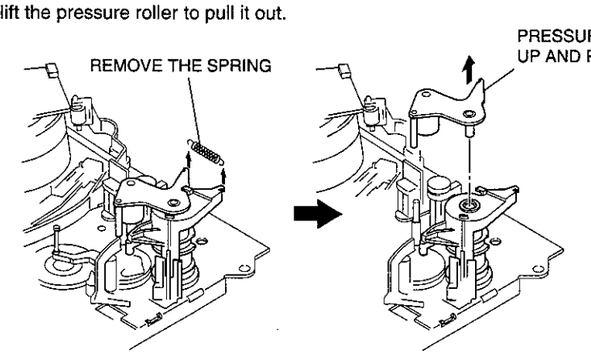
[Work Procedure]

1. Remove the top cover.
2. Remove the front panel.

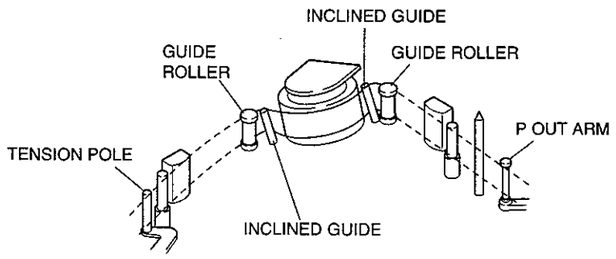
If the tape is wound round the cylinder in the loading state

If the cassette does not come out from the FL mechanism in the unloading state.

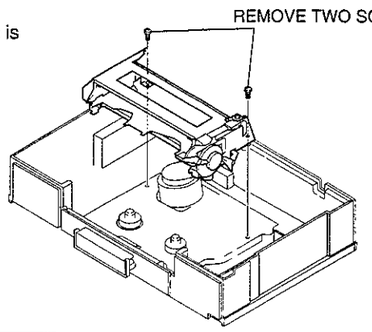
Remove the spring and lift the pressure roller to pull it out.



Slacken the tape and release it from the tension pole, guide rollers, inclined guides and P out arm.



1)Remove two screws holding the FL mechanism.
2)Hold the cassette lid with your fingers so the tape is not damaged and remove the FL mechanism.
3)Remove the slack tape and eject the cassette.



4-2. Trouble Display Function

This VCR has a function which displays mechanism malfunctions, etc. in the LCD display. Use this function to analyze the cause when the power is shut off due to a malfunction, etc. in the mechanism.
Two types of information are displayed, (1)The operation mode when the malfunction occurred,
(2)Malfunction Codes.
The details of the malfunction are displayed as follows.

Procedure to display a malfunction

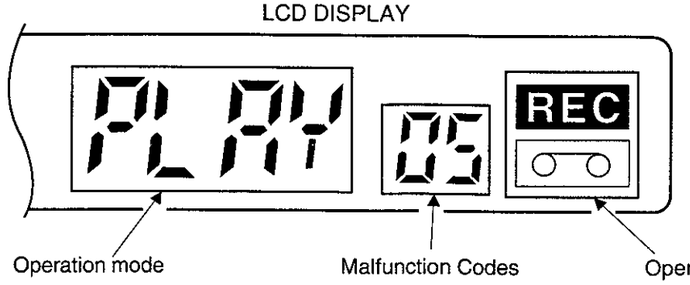
The first trouble mode is indicated by pressing the "CHANNEL DOWN" button when the power is turned off. The last trouble mode is indicated by pressing the "REC" button when the power is turned off. The data is stored until clear operation.

Procedure to clear the malfuntion display

Press the "CHANNEL DOWN" button on the VCR and hold it, then press the microprocessor "RESET" button to initialize the trouble display.

- Hold the "CHANNEL DOWN" button depressed and release it after the display lights.

LCD DISPLAY



[Display of Details of Malfunction]

Displayed No.	Item	Details
00	No malfunction	
01	FL mechanism lock	Malfunction in insertion/ejection of cassette
02	Capstan lock	Malfunction of capstan motor drive during tape unloading
04	Reel lock	Reel rotation trouble when tape is running
05	Cylinder lock	Cylinder rotation malfunction
07	Loading mechanism lock	Malfunction in shifting mechanism mode
16	Servo lock	Shorting of 5V detected

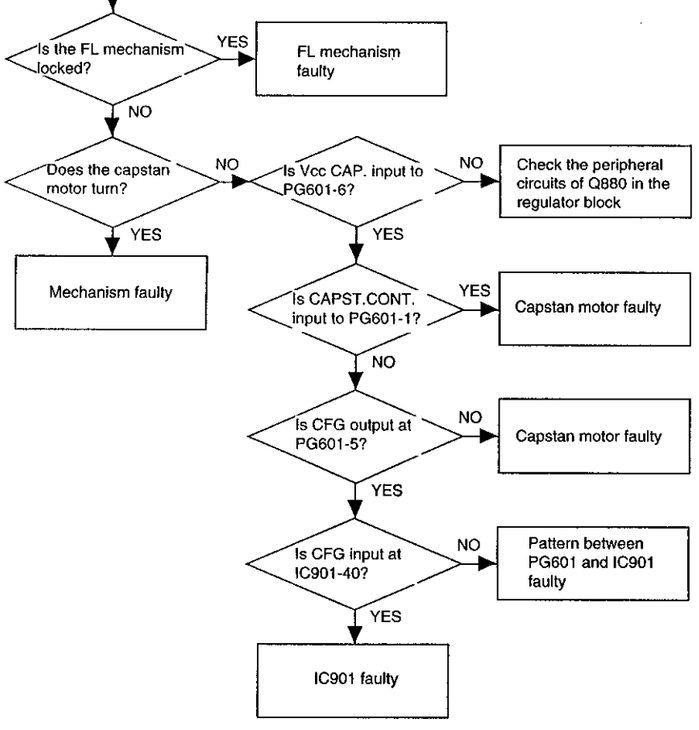
[Mode Display when Malfunction Has Occurred]

Mode	Display
Stop	No display
Fast forward	**FF**
Super fast forward	**S.FF**
Rewind	**REW**
Super rewind	**S.REW**
Recording	**REC**
Timer recording	(TIMER) **REC**

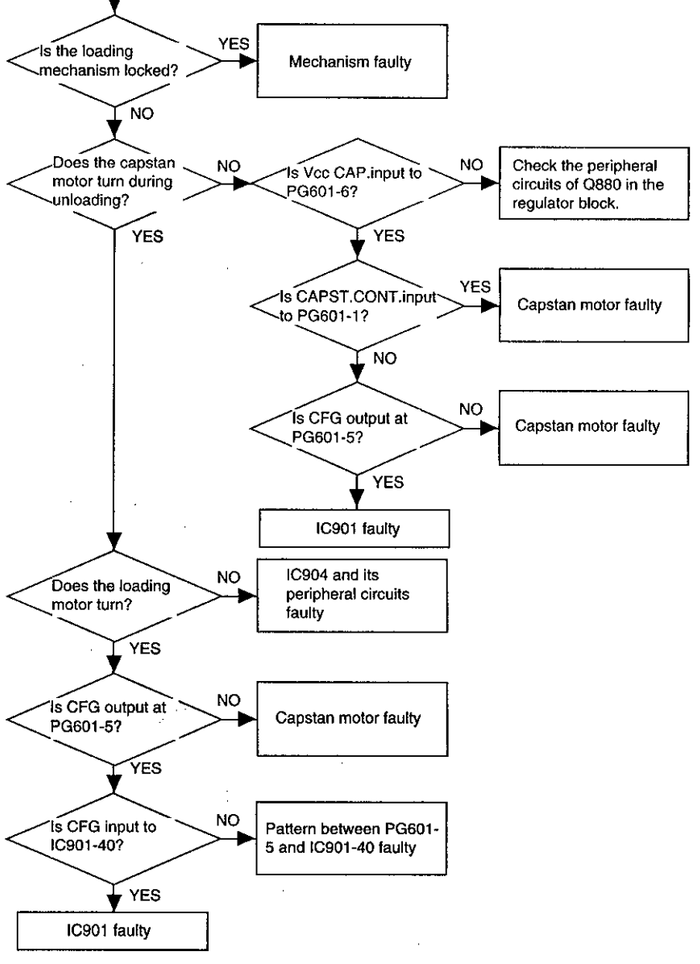
Mode	Display
Recording pause	**REC** (flashes)
Playback	**PLAY**
Forward search	**SRCH**
Reverse search	**-SRCH**
Slow	**SLOW**
Still play	**STILL**
Reverse slow	**-SLOW**

No symbols are displayed if the malfunction occurred when a cassette was inserted or ejected, or the power was switched on from off, and off from on.

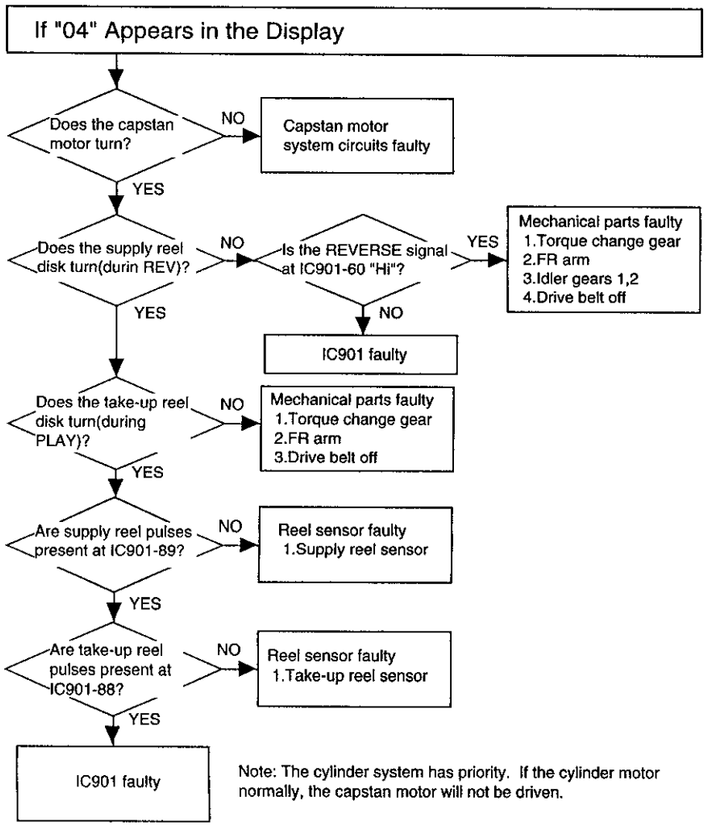
If "01" Appears in the Display



If "02" Appears in the Display

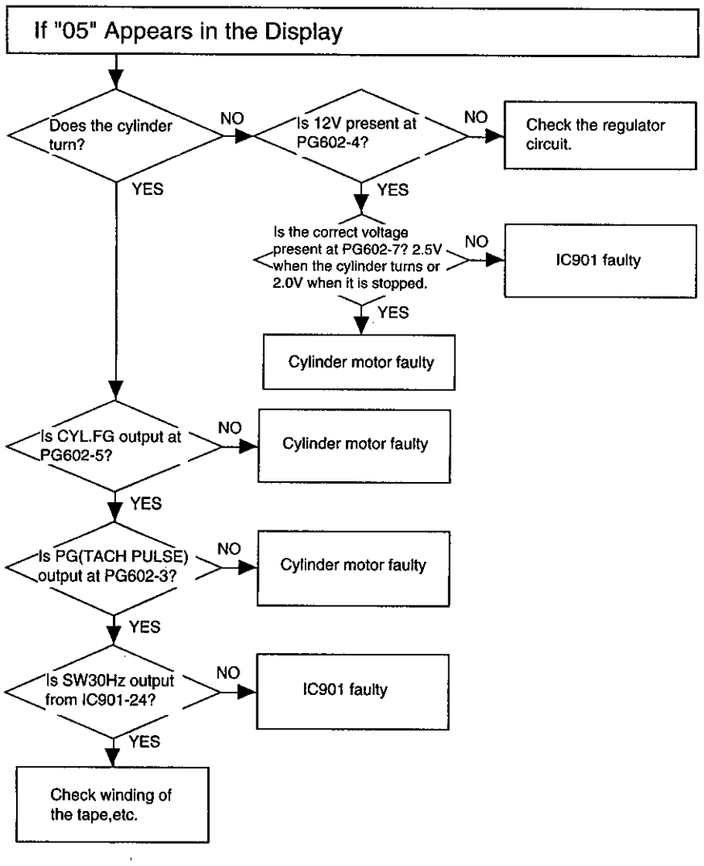


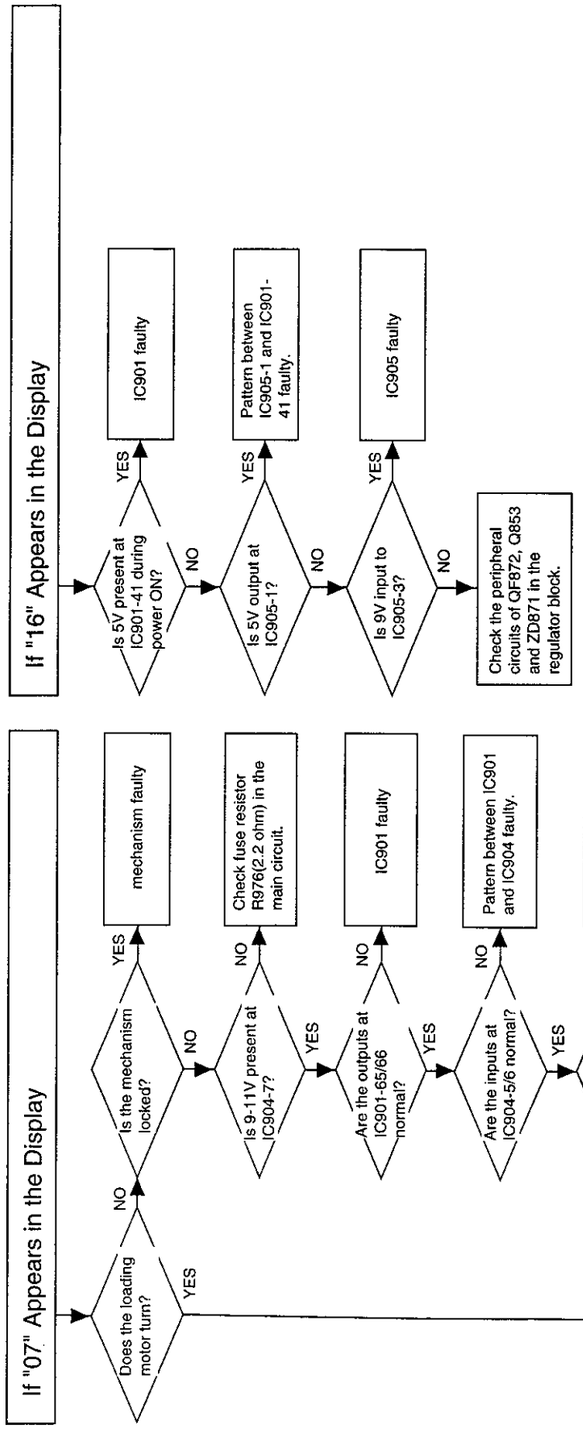
If "04" Appears in the Display



Note: The cylinder system has priority. If the cylinder motor normally, the capstan motor will not be driven.

If "05" Appears in the Display





5. Troubleshooting the Switching Regulator

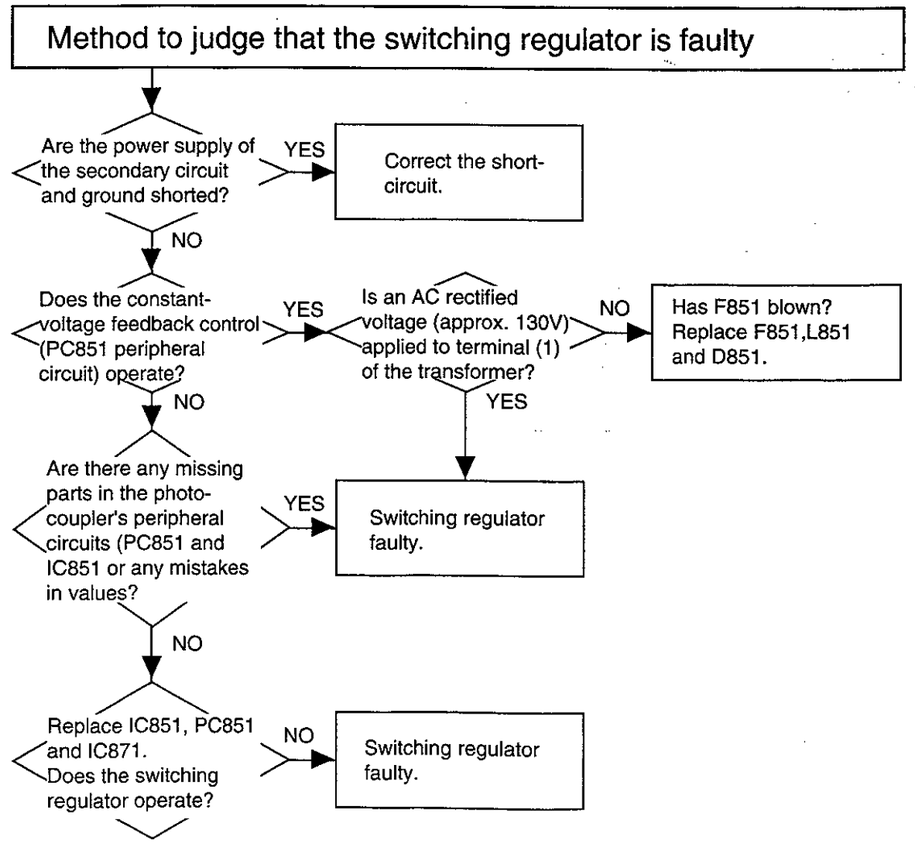
This section summarizes the troubleshooting of defects in the switching regulator. Perform diagnosis, taking each defective phenomenon into consideration. Even if the same defective phenomenon appears, it may be caused by other circuits, not by the switching regulator, so use this item as a reference.

Cautions when checking and repairing the switching regulator circuit

When using test equipment to check the primary circuit (circuit No. 8XX) of the power supply, use a two-pole AC outlet for the test equipment (attach a conversion adapter to the test equipment plug to connect it to a three-pole outlet).

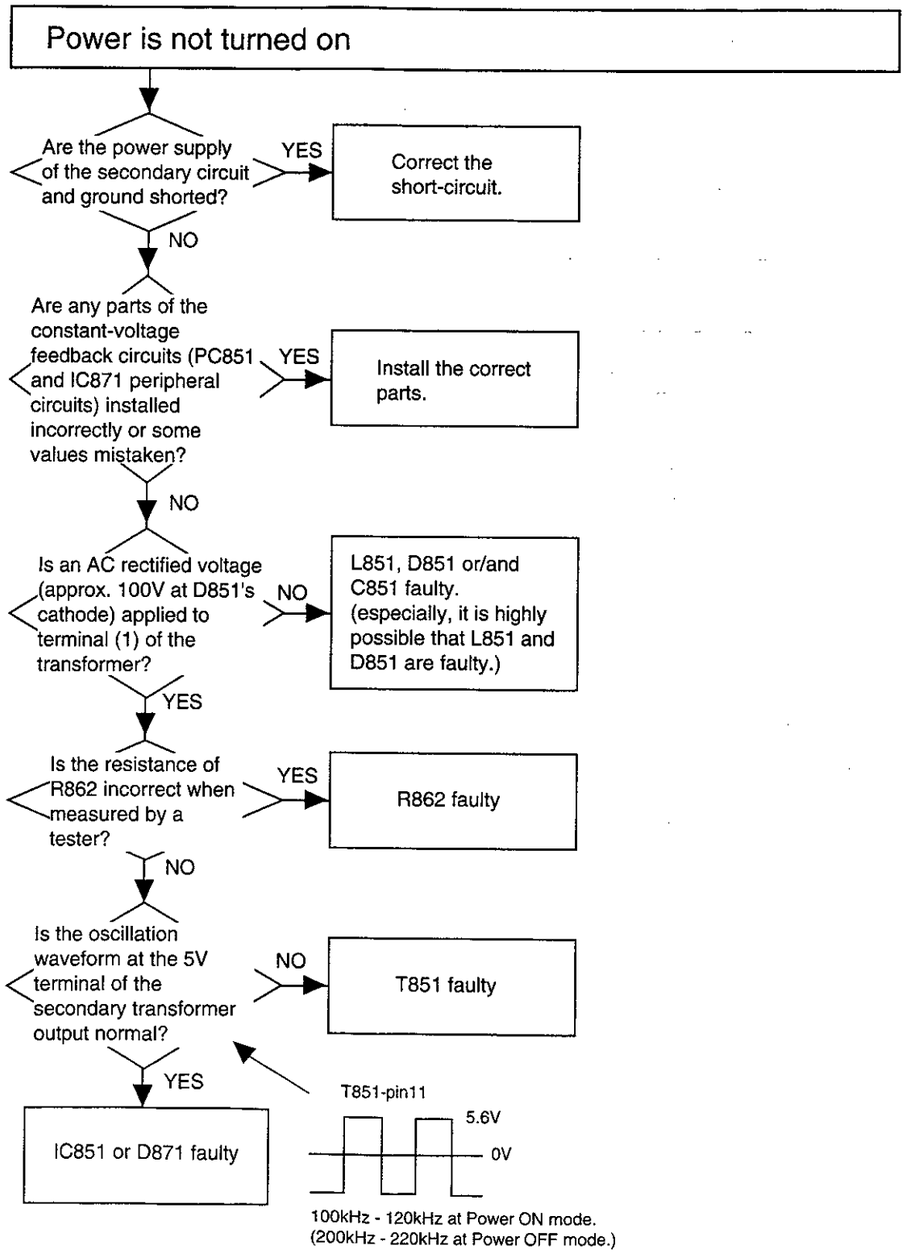
Be careful of electric shock

There are many components that generate high voltage in the power block (transformer primary circuits) at the right of the unit. Take great care when servicing the unit or handling it with power on.
(Note: The heat sink to which Q880 and Q853 are attached does not generate a high voltage.)


Method to judge that the switching regulator is faulty
Are the power supply of the secondary circuit and ground shorted?
YES
Correct the short-circuit.
NO
Does the constant-voltage feedback control (PC851 peripheral circuit) operate?
YES
Is an AC rectified voltage (approx. 130V) applied to terminal (1) of the transformer?
NO
Has F851 blown? Replace F851,L851 and D851.
YES
NO
Are there any missing parts in the photo-coupler's peripheral circuits (PC851 and IC851 or any mistakes in values?
YES
Switching regulator faulty.
NO
Replace IC851, PC851 and IC871. Does the switching regulator operate?
NO
Switching regulator faulty.

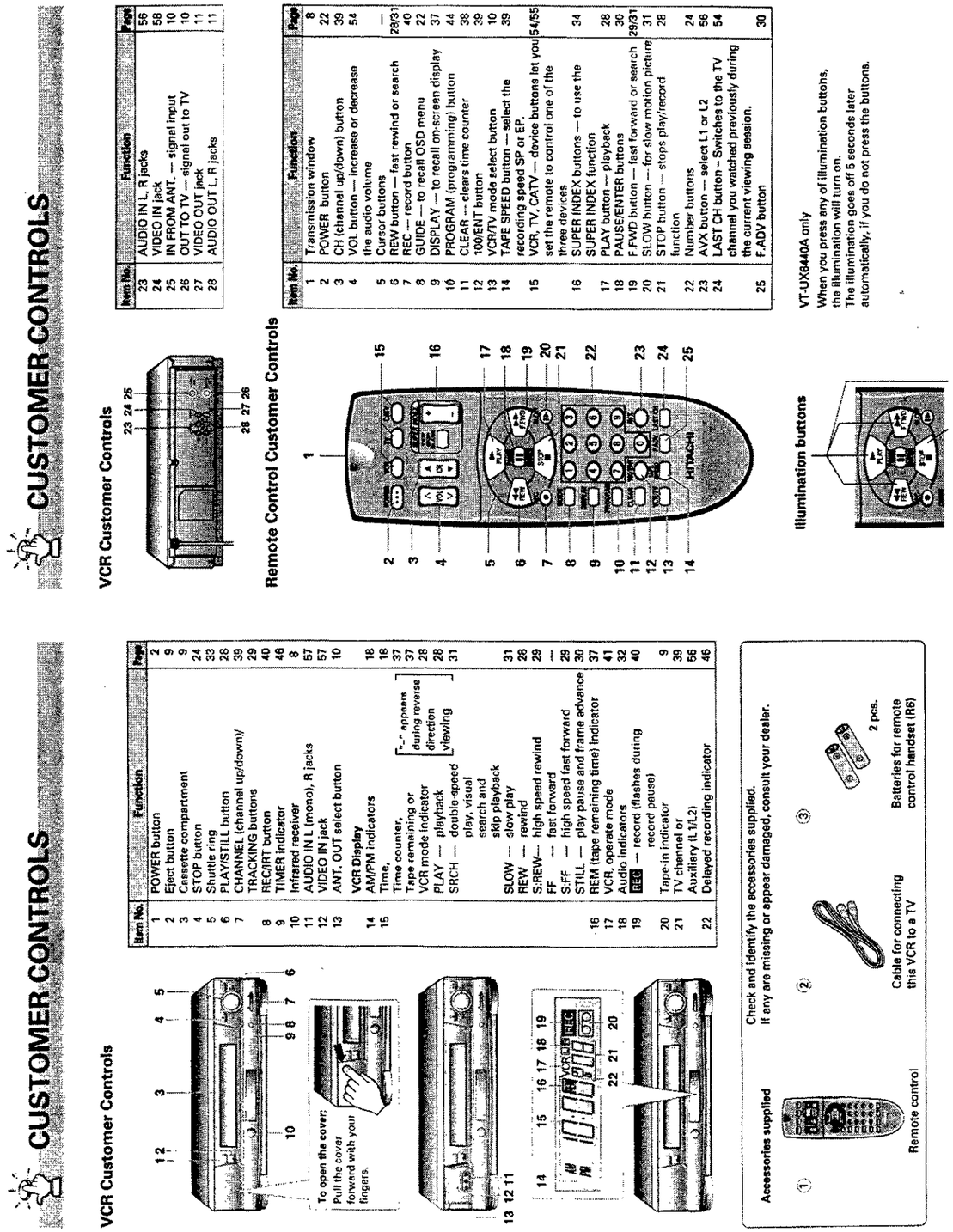
Troubleshooting by Observing Defective Phenomena

If the switching regulator is normal and there is a defect in another circuit (shorting between the power supply and ground of the secondary circuit), the protective function of IC851 operates and the power is not turned on. If a defect occurs in the switching regulator, a phenomenon such that the VCR power is not turned on or the power fuse has blown also occurs.


Power is not turned on
Are the power supply of the secondary circuit and ground shorted?
YES
Correct the short-circuit.
NO
Are any parts of the constant-voltage feedback circuits (PC851 and IC871 peripheral circuits) installed incorrectly or some values mistaken?
YES
Install the correct parts.
NO
Is an AC rectified voltage (approx. 100V at D851's cathode) applied to terminal (1) of the transformer?
NO
L851, D851 or/and C851 faulty. (especially, it is highly possible that L851 and D851 are faulty.)
YES
Is the resistance of R862 incorrect when measured by a tester?
YES
R862 faulty
NO
Is the oscillation waveform at the 5V terminal of the secondary transformer output normal?
NO
T851 faulty
YES
IC851 or D871 faulty
T851-pin11
5.6V
0V
100kHz - 120kHz at Power ON mode.
(200kHz - 220kHz at Power OFF mode.)

6. Instructions on Use

(The following are extracts from the instruction manual.)


CUSTOMER CONTROLS
VCR Customer Controls
23 24 25
26 27 28
Remote Control Customer Controls
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Illumination buttons
VT-UX6440A only
When you press any of illumination buttons, the illumination will turn on.
The illumination goes off 5 seconds later automatically, if you do not press the buttons.

Item No.	Function	Page
23	AUDIO IN L, R jacks	56
24	VIDEO IN jack	58
25	IN FROM ANT. — signal input	10
26	OUT TO TV — signal out to TV	10
27	VIDEO OUT jack	11
28	AUDIO OUT L, R jacks	11

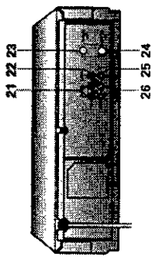
Item No.	Function	Page
1	Transmission window	8
2	POWER button	22
3	CH (channel up/down) button	39
4	VOL button — increase or decrease the audio volume	54
5	Cursor buttons	—
6	REW button — fast rewind or search	28/31
7	REC — record button	40
8	GUIDE — to recall OSD menu	22
9	DISPLAY — to recall on-screen display	37
10	PROGRAM (programming) button	44
11	CLEAR — clears time counter	38
12	100/ENT button	39
13	VCR/TV mode select button	10
14	TAPE SPEED button — select the recording speed SP or EP.	39
15	VCR, TV, CATV — device buttons let you set the remote to control one of the three devices	54/65
16	SUPER INDEX buttons — to use the SUPER INDEX function	34
17	PLAY button — playback	28
18	PAUSE/ENTER buttons	30
19	F.FWD button — fast forward or search	29/31
20	SLOW button — for slow motion picture	31
21	STOP button — stops play/record function	28
22	Number buttons	24
23	AVX button — select L1 or L2	56
24	LAST CH button – Switches to the TV channel you watched previously during the current viewing session.	54
25	F.ADV button	30

CUSTOMER CONTROLS
VCR Customer Controls
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
To open the cover: Pull the cover forward with your fingers.
Accessories supplied
Check and identify the accessories supplied.
If any are missing or appear damaged, consult your dealer.
Remote control
Cable for connecting this VCR to a TV
2 pcs.
Batteries for remote control handset (R6)

Item No.	Function	Page
1	POWER button	2
2	Eject button	9
3	Cassette compartment	24
4	STOP button	33
5	Shuttle ring	28
6	PLAY/STILL button	39
7	CHANNEL (channel up/down)/ TRACKING buttons	29
8	REC/IRT button	40
9	TIMER indicator	46
10	Infrared receiver	8
11	AUDIO IN L (mono), R jacks	57
12	VIDEO IN jack	57
13	ANT. OUT select button	10
	VCR Display	
14	AM/PM indicators	18
15	Time, Time counter, Tape remaining or VCR mode indicator PLAY — playback SRCH — double-speed play, visual search and skip playback	18 / 37 / 37 / 28 / 28 / 31 ("-" appears during reverse direction viewing)
	SLOW — slow play	31
	REW — rewind	28
	S.REW— high speed rewind	29
	FF — fast forward	29
	S.FF — high speed fast forward	—
	STILL — play pause and frame advance	29
16	REM (tape remaining time) Indicator	30
17	VCR, operate mode	37
18	Audio indicators	41
19	REC — record (flashes during record pause)	32
20	Tape-in indicator	40
21	TV channel or Auxiliary (L1/L2)	9
22	Delayed recording indicator	39

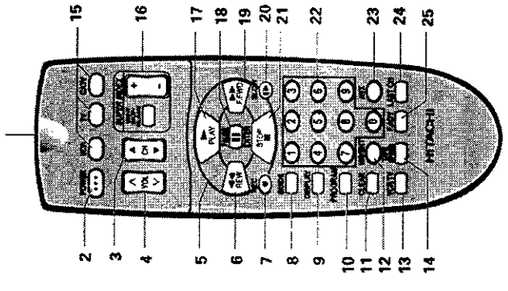
CUSTOMER CONTROLS

VCR Customer Controls



Item No.	Function	Page
21	AUDIO IN L, R jacks	52
22	VIDEO IN jack	54
23	IN FROM ANT. — signal input	10
24	OUT TO TV — signal out to TV	10
25	VIDEO OUT jack	11
26	AUDIO OUT L, R jacks	11

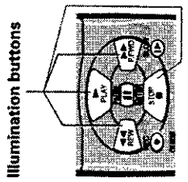
Remote Control Customer Controls



Item No.	Function	Page
1	Transmission window	8
2	POWER button	20
3	CH (channel up/down) button	35
4	VOL button — increase or decrease the audio volume	50
5	Cursor buttons	—
6	REW button — fast rewind or search	25/28
7	REC — record button	36
8	GUIDE — to recall OSD menu	20
9	DISPLAY — to recall on-screen display	33
10	PROGRAM (programming) button	40
11	CLEAR — clears time counter	34
12	100/ENT button	35
13	VCR/TV mode select button	10
14	TAPE SPEED button — select the recording speed SP or EP.	35
15	VCR, TV, CATV — device buttons let you set the remote to control one of the three devices	50/51
16	SUPER INDEX buttons — to use the SUPER INDEX function	30
17	PLAY button — playback	25
18	PAUSE/ENTER buttons	27
19	F.FWD button — fast forward or search	26/28
20	SLOW button — for slow motion picture	28
21	STOP button — stops play/record function	25
22	Number buttons	21
23	AVX button — select L1 or L2	52
24	LAST CH button - Switches to the TV channel you watched previously during the current viewing session.	50
25	F.ADV button	27

VT-FX6411A only

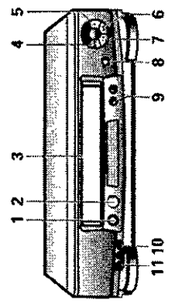
Illumination buttons

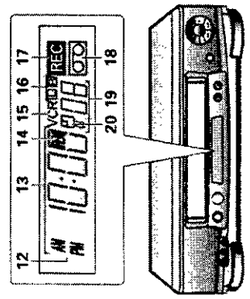


When you press any of illumination buttons, the illumination will turn on. The illumination goes off 5 seconds later automatically, if you do not press the buttons.

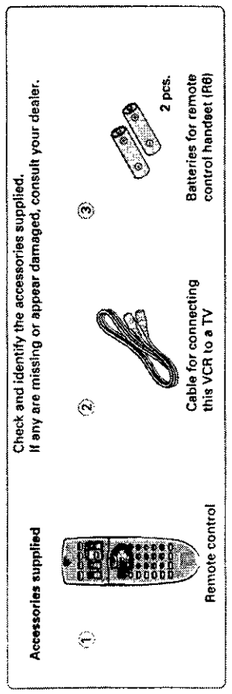
CUSTOMER CONTROLS

VCR Customer Controls





Item No.	Function	Page
1	POWER button	2
2	Infrared receiver	8
3	Cassette compartment	9
4	STOP/EJECT button	9
5	PLAY button	25
6	F.FWD button	26
7	REW button	26
8	REC/ŔT button	36
9	CHANNEL (channel up/down)/ TRACKING buttons	35 26
10	AUDIO IN L (mono), R jacks	53
11	VIDEO IN jack	53
	VCR Display	
12	AM/PM indicators	18
13	Time, Time counter, Tape remaining or VCR mode indicator	19 33 33
	PLAY — playback ("►" appears during reverse direction viewing)	25
	SRCH — double-speed play, visual search and skip playback	25 28
	SLOW — slow play	28
	REW — rewind	25
	S-REW— high speed rewind	26
	FF — fast forward	—
	S-FF — high speed fast forward	26
	STILL — play pause and frame advance	27
14	REM (tape remaining time) indicator	33
15	VCR, operate mode	37
16	Audio indicators	29
17	REC — record (flashes during record pause)	36
18	Tape-in indicator	9
19	TV channel or Auxiliary (L1/L2)	35 52
20	Delayed recording indicator	42



CHAPTER 2 DISASSEMBLY

1. Before Starting Disassembly

1) Unplug the power cord from the AC outlet.
2) [Removal procedure]
   If a special procedure is required when dismantling any component, it is indicated using numbers. Follow the numbers (1),(2),(3) ... shown in the illustrations.
   [Reinstallation procedure]
   Reinstall each component in the reverse order to removal when otherwise not specified.
3) Insert card connectors securely all the way as they are of the direct insertion type.

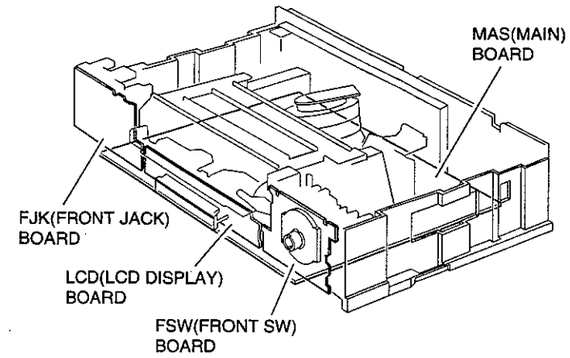


Fig. 1-1

2.Disassembly Method

When replacing defective parts, first refer to the "Parts hierarchy chart" shown below.
This chart shows the procedure for parts removal when replacing defective parts.

[How to use the parts hierarchy chart]
(1) Locate the part to be replaced.
(2) Check the parts in the ranks above the part to be replaced and start dismantling.
(3) Replace the defective part and reinstall the parts in the reverse order to that shown in the parts hierarchy chart.

Parts Hierarchy Chart

Note: Dismantle parts in the eject state.

Parts to remove	Item	Parts to remove	Item
Top cover	2-1		
Front panel	2-1	Cassette door	2-2
		Insulator	2-2
Rear panel	2-1		
US-FL mechanism	2-1		
Front piece	2-3	FJK board	2-3
		LCD board	2-3
		FSW board	2-3
US mechanism/ MAS board assembly	2-4	US mechanism	2-5

Disassembly Procedure Diagrams

Item	Parts to remove
2-1	Top cover, front panel, rear panel and US-FL mechanism

■ Caution when reinstalling the US-FL mechanism
Reinstall the US-FL mechanism in the state that the cassette holder is pulled forward.
(Otherwise, the switch arm could damage the FL switch on the MAS board.)

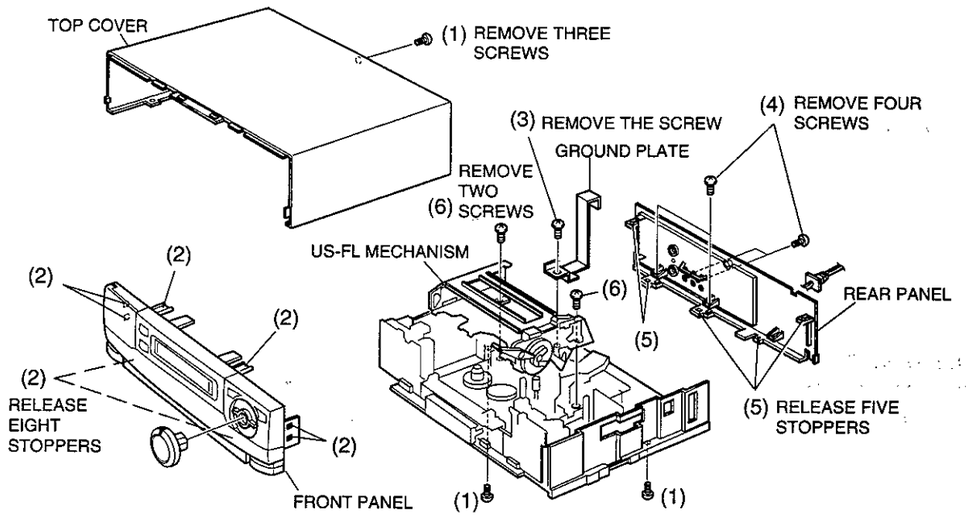


Fig. 2-1

2-2	Cassette door and insulator

■ Caution when reinstalling the front panel
Reinstall the front panel in the state the cassette door is pushed so the boss of the door arm comes to the front of the boss support of the cassette door.

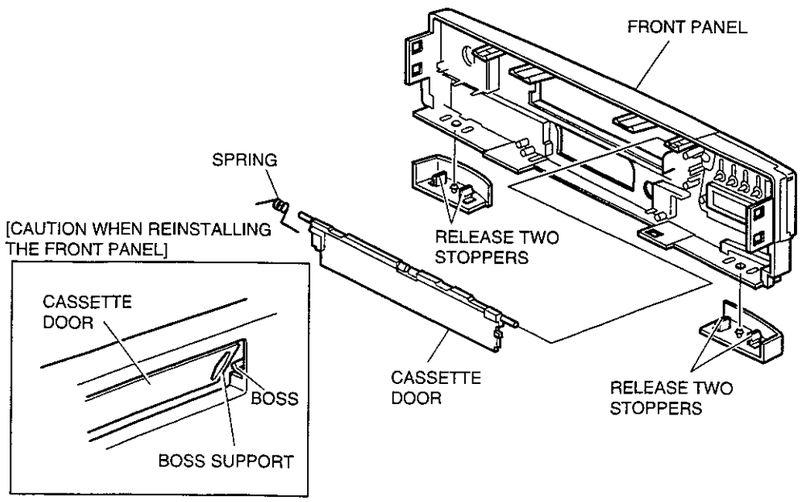


Fig. 2-2

VT-UX6430A

Item	Parts to remove
2-3	Front piece, FJK, LCD and FSW board

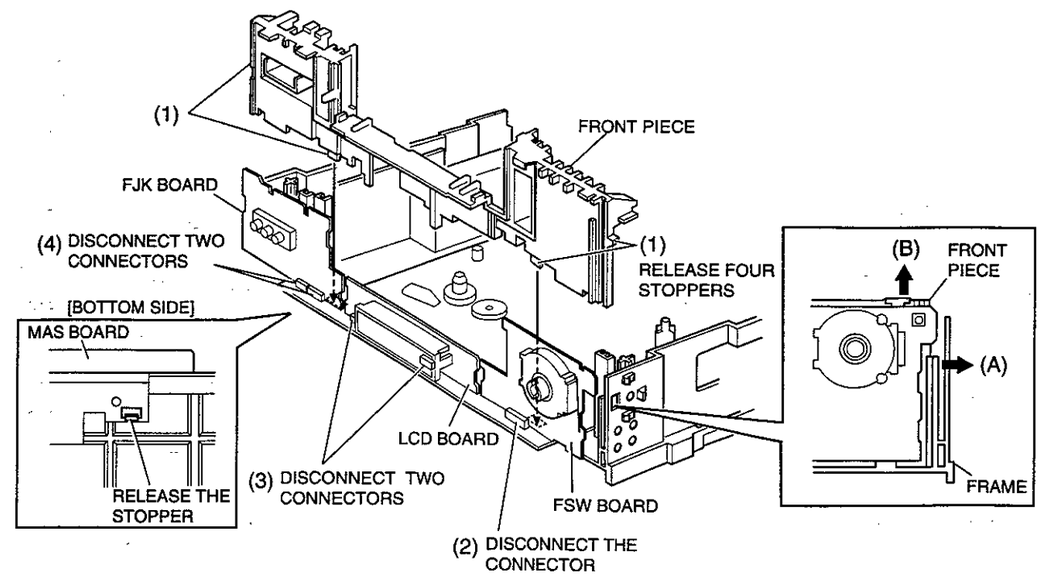


Fig. 2-3

2-4	US mechanism/MAS board assembly

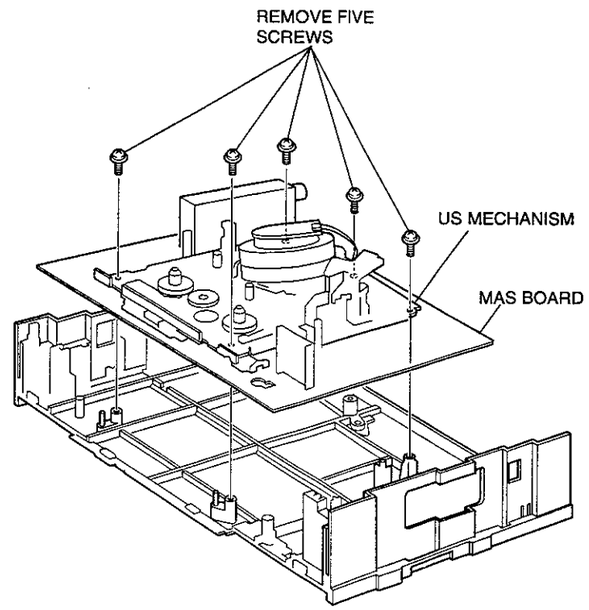


Fig. 2-4

Item	Parts to remove
2-5	Separation of MAS board from US mechanism

[REAR OF THE MECHANISM]

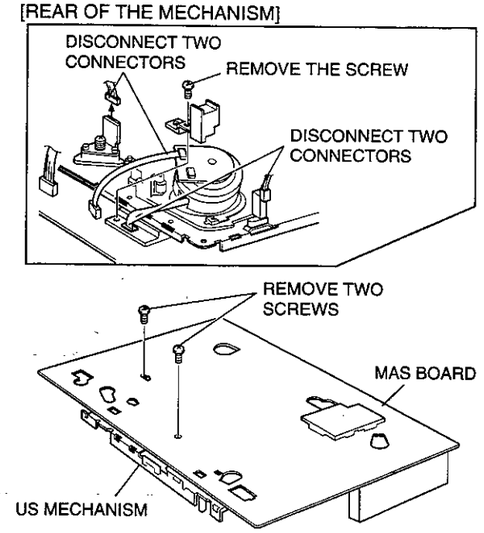


Fig. 2-6

Procedure to remove only the US mechanism

With this VCR the US mechanism can be removed without removing the MAS board. This is done by a different method from the normal disassembly method.

Parts to remove	Item
Top, Front and Rear panel	2-1
⇩	
US-FL mechanism	2-1
⇩	
Remove two screws on the bottom of the VCR.	2-6
⇩	
Remove five screws holding the US mechanism.	2-6
⇩	
Disconnect the connectors on the US mechanism and lift the mechanism.	

2-6	Procedure to remove only the US mechanism

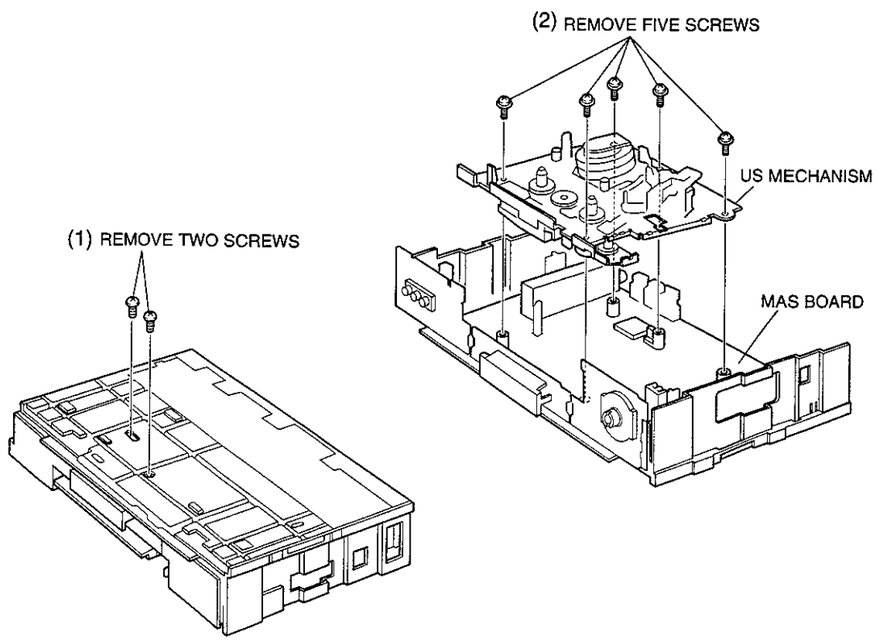


Fig. 2-7

1. Before Starting Disassembly

1) Unplug the power cord from the AC outlet.
2) [Removal procedure]
   If a special procedure is required when dismantling any component, it is indicated using numbers. Follow the numbers (1),(2),(3) ... shown in the illustrations.
   [Reinstallation procedure]
   Reinstall each component in the reverse order to removal when otherwise not specified.
3) Insert card connectors securely all the way as they are of the direct insertion type.

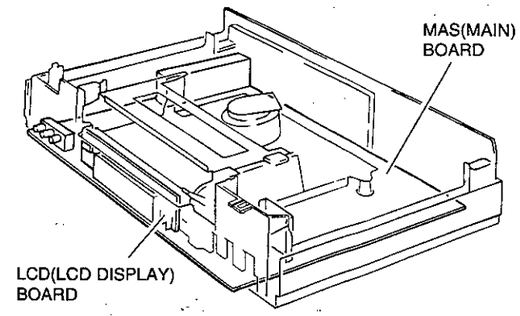


Fig. 1-1

2.Disassembly Method

When replacing defective parts, first refer to the "Parts hierarchy chart" shown below. This chart shows the procedure for parts removal when replacing defective parts.

[How to use the parts hierarchy chart]
(1) Locate the part to be replaced.
(2) Check the parts in the ranks above the part to be replaced and start dismantling.
(3) Replace the defective part and reinstall the parts in the reverse order to that shown in the parts hierarchy chart.

Parts Hierarchy Chart

Note: Dismantle parts in the eject state.

Parts to remove	Item	Parts to remove	Item
Top cover	2-1		
⇩			
Front panel	2-1	→ Cassette door	2-2
⇩			
Rear panel	2-1		
⇩			
US-FL mechanism	2-1		
⇩			
Front piece	2-3	→ LCD board	2-3
⇩			
US mechanism/ MAS board assembly	2-4	→ US mechanism	2-5

Disassembly Procedure Diagrams

Item	Parts to remove
2-1	Top cover, front panel, rear panel and US-FL mechanism

■ Caution when reinstalling the US-FL mechanism
Reinstall the US-FL mechanism in the state that the cassette holder is pulled forward.
(Otherwise, the switch arm could damage the FL switch on the MAS board.)

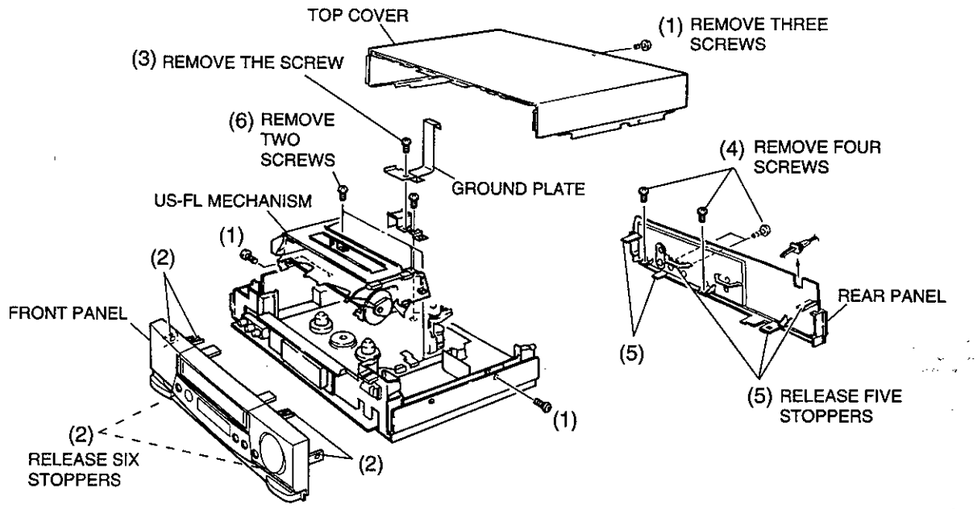


Fig. 2-1

2-2	Cassette door and buttons

■ Caution when reinstalling the front panel
Reinstall the front panel in the state the cassette door is pushed so the boss of the door arm comes to the front of the boss support of the cassette door.

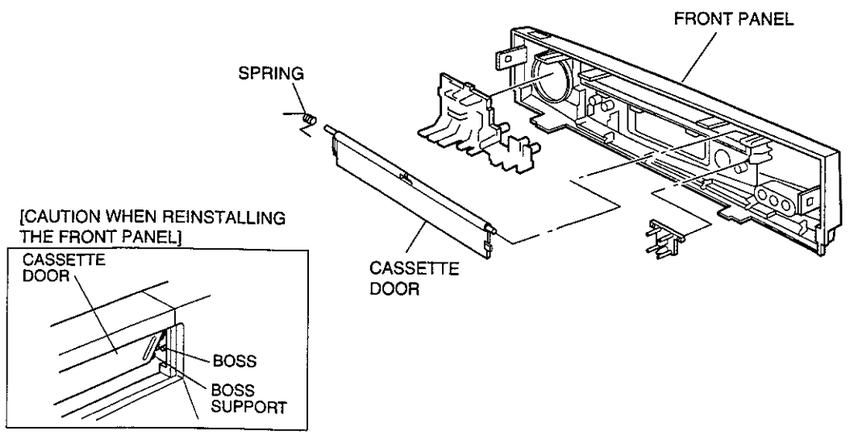


Fig. 2-2

Item	Parts to remove
2-3	Front piece and LCD board

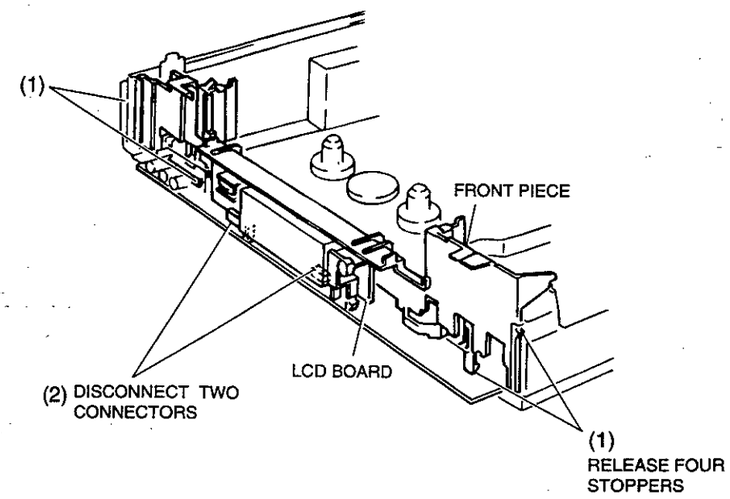


Fig. 2-3

2-4	US mechanism/MAS board assembly

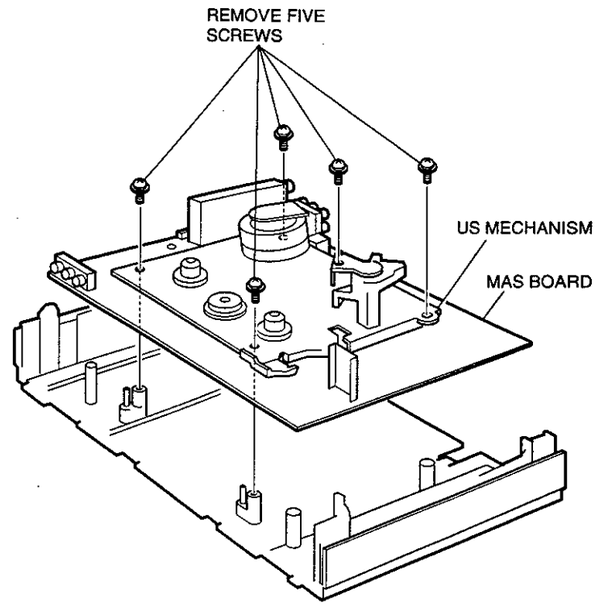


Fig. 2-4

Item	Parts to remove
2-5	Separation of MAS board from US mechanism

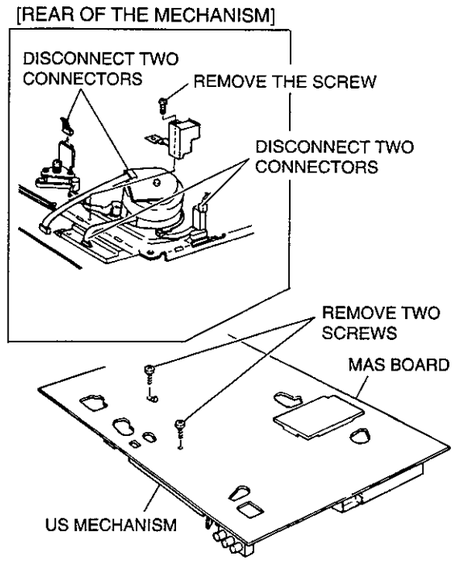


Fig. 2-5

Procedure to remove only the US mechanism

With this VCR the US mechanism can be removed without removing the MAS board. This is done by a different method from the normal disassembly method.

Parts to remove	Item
Top, Front and Rear panel	2-1
⇩	
US-FL mechanism	2-1
⇩	
Remove two screws on the bottom of the VCR.	2-6
⇩	
Remove five screws holding the US mechanism.	2-6
⇩	
Disconnect the connectors on the US mechanism and lift the mechanism.	

2-6	Procedure to remove only the US mechanism

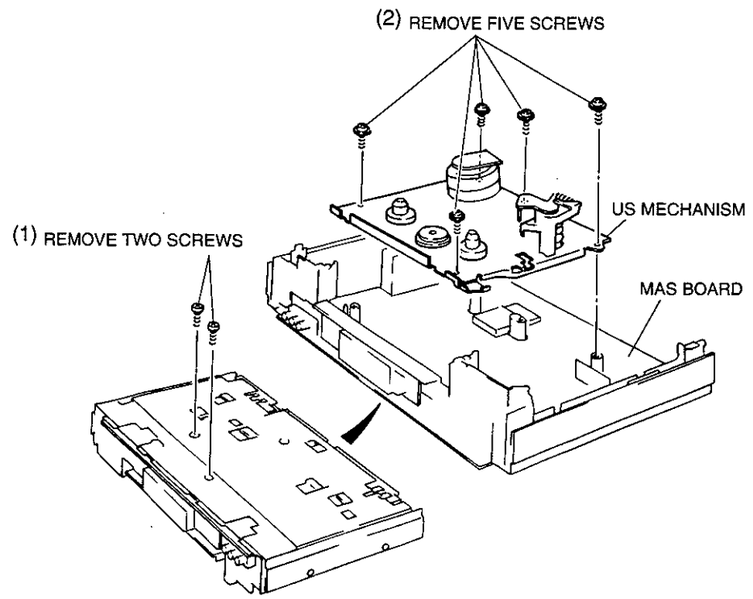


Fig. 2-6

3. Cautions When Reinstalling the US Mechanism

This VCR has mechanism sensors on the MAS board and the capstan and loading motors are connected via direct connectors. Therefore, when reinstalling the US mechanism, observe the following cautions.

1) Align the ▽ mark and mode no. 1 of the mechanism state switch on the MAS board. (Mode no. 1 of the mechanism state switch has a click position.)

2) Check that mode no. 1 on the P drive gear in the mechanism and the ▽ mark of the spring hook are aligned. If they are not aligned, turn the loading motor pulley to align them.

3) Pass the END LED through the hole in the mechanism and install the mechanism from immediately above using the installation position holes as reference. Check that the boss of the mechanism state switch and the hole in the cam gear are aligned.

4) Push the terminal sections (shaded sections ▨) of the capstan and loading motors and check that they are inserted securely.

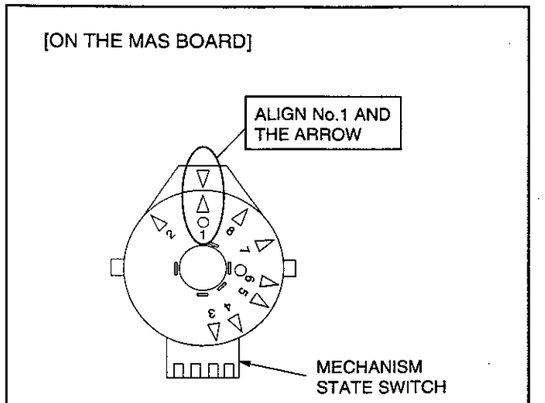


Fig. 3-1

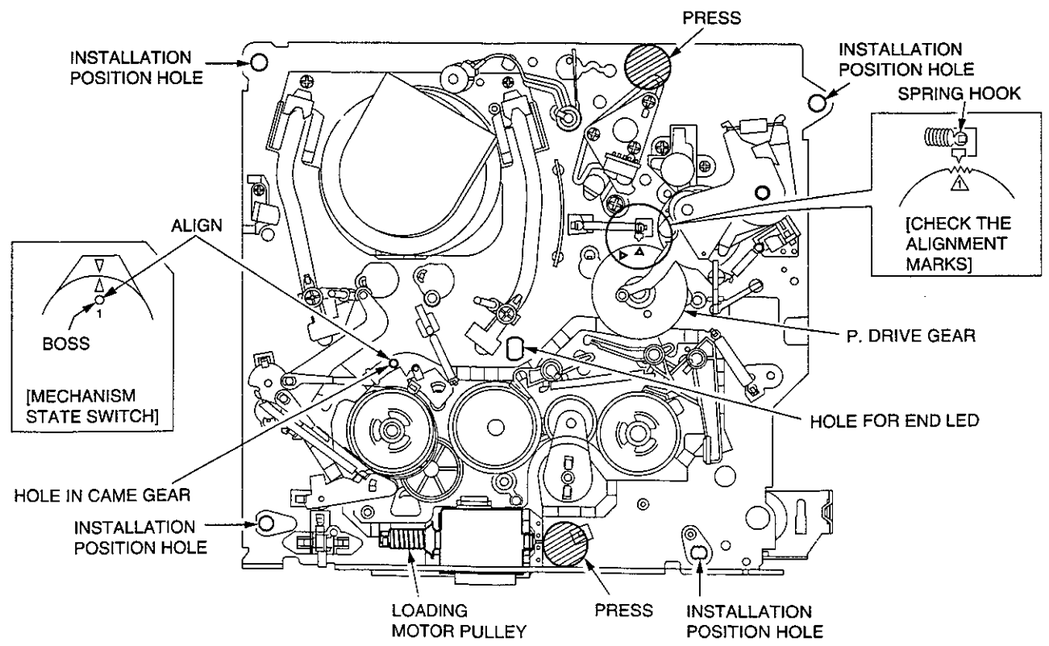


Fig. 3-2

MEMO

CHAPTER 3 ELECTRIC CIRCUIT ADJUSTMENT

Service Position

1. Servicing position during electrical adjustment

Perform adjustment after removing the top cover, front panel and rear panel.

When the shield cover of the connector between the cylinder motor and MAS boards is removed, noise appears in the playback picture. Attach the shield cover when checking the picture on the screen.

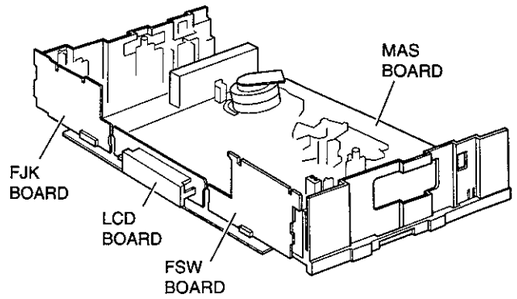


Fig. 1 VT-UX6430A

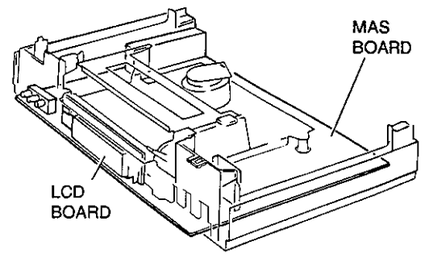


Fig. 2 VT-FX6410A

2. Servicing positions when repairing and checking circuits

2-1. Procedure to set the FJK, LCD and FSW boards to the servicing positions (Figs. 3, 4)

1) Remove the top cover and front panel.
2) Remove the rear panel.
3) Remove the US-FL mechanism.
4) Remove the front piece.
5) Open each board as shown in the figure below and perform checks from the pattern sides indicated by the arrows.

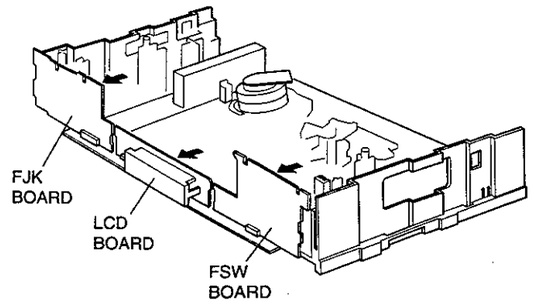


Fig. 3 VT-UX6430A

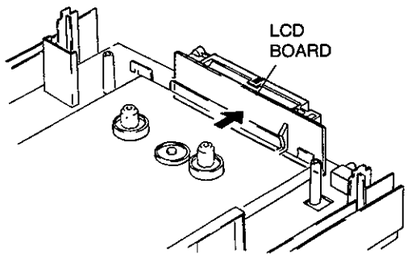


Fig. 4 VT-FX6410A

2-2. Procedure to set the MAS board to the servicing position (Figs. 5 and 6)

1) Remove the top cover and front panel.
2) Remove the rear panel.
3) Remove the US-FL mechanism and front piece.
4) Remove the MAS board, with the LCD, FJK and FSW boards and US mechanism assembled from the frame.
5) Turn over the MAS board and perform checks from the pattern side indicated by the arrow.

Note the following two points at this time.

1) Lay an insulation sheet under the boards.
2) Attach the shield cover at the rear of the cylinder. Attach the US-FL mechanism when loading the tape.

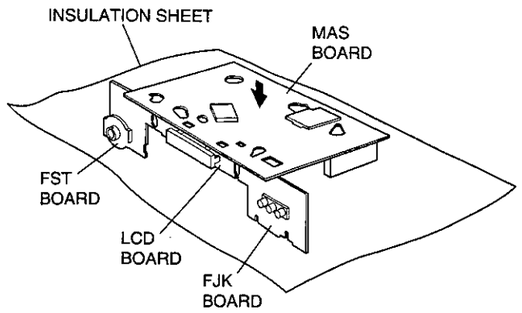


Fig. 5 VT-UX6430A

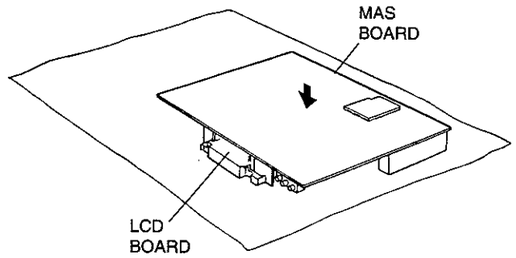


Fig. 6 VT-FX6410A

3. Be careful of electric shocks

There are many components that generate high voltage in the power block (transformer primary circuits) at the right of the unit. Take great care when servicing the unit or handling it with power on.
(Note: The heat sink to which Q880 and Q853 are attached does not generate a high voltage.)

◆ Electrical Circuit Adjustment

1. Test equipment/jigs necessary for adjustment

1) Dual-trace oscilloscope
2) Color bar generator
3) Voltmeter
4) Monitor TV (with A/V jacks)
5) Alignment tapes:
   NTSC tape : Part No. 7099046
   30HMP2-1 : Part No. 7099089
   24HMAF-2 : Part No. 7099153
   (Hi-Fi alignment tape)
6) Blank tape

2. Cautions on adjustment

1) The following conditions apply when otherwise not specified.
   Probe of oscilloscope: 10:1
   Synchronization of oscilloscope: Internal sync
   Ground of test equipment: PG2508 pin 6
   (on MAS board)
2) When performing more than one adjustment, follow the specified order.

3. Tips for adjustment

3-1. Procedure to reset the main microprocessor

The main microprocessor is not reset even when the power cord is unplugged from the AC outlet because its power is backed up by a backup circuit. Press reset switch on the board to reset the entire microprocessor. Do not press the reset switch with the power cord unplugged from the AC outlet as the slow tracking preset value could drift. If the preset value drifts, plug the power cord into an AC outlet and press the reset switch again with the power turned on. It is recommended that you press the reset switch after reinstalling the front panel.

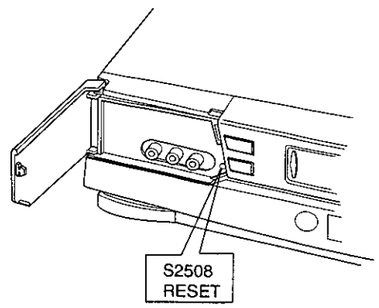


Fig. 7 VT-UX6430A

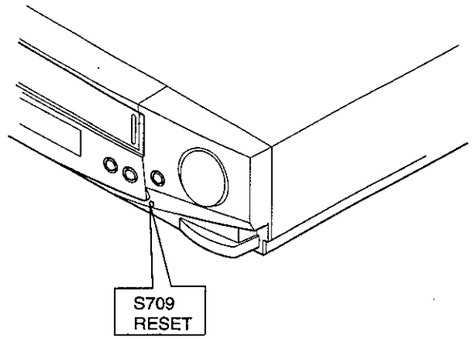


Fig. 8 VT-FX6410A

3-2. Procedure to switch off the blue background function

1) Press the "GUIDE" button of the remote control to display the menu on the monitor TV screen.
2) Press "▼" and "▶" to select the VCR setup screen.
3) Press "▶" to specify blue background off.

3-3. Procedure to obtain the EP head playback mode (X-value adjustment test mode)

Press the "1" and "4" buttons of the remote control provided simultaneously when an alignment tape is being played and hold them, then press the "CHANNEL ▼" button on the VCR; The VCR enters the EP head playback mode (X-value adjustment test mode). Check that "**TEST**" appears in the LCD display.

4. Connections of test equipment

Connect the test equipment as follows when otherwise not specified.

1) Connect a color bar generator to the video input jack of the VCR.
2) Connect a monitor TV to the video output jack of the VCR.
3) Connect a monitor TV (able to handle a stereo signal) to the audio output jack.

5. Test Points and Adjustment Points

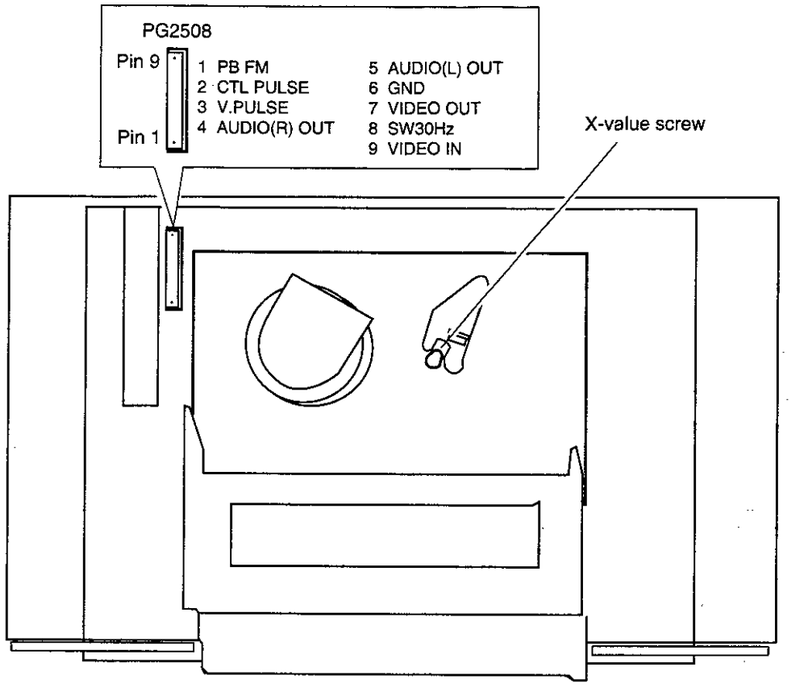


Fig. 9 VT-UX6430A

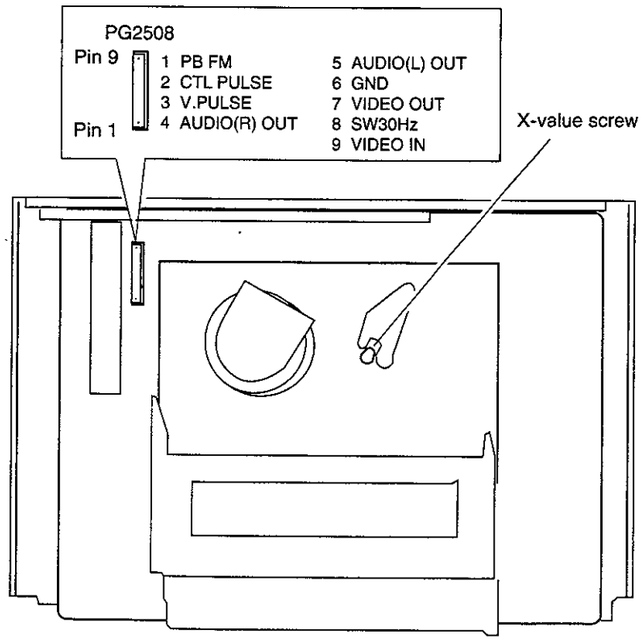


Fig. 10 VT-FX6410A

6. Servo Circuit Adjustments

6-1. Switching point adjustment (Figs. 9,10)

Purpose:
To set the switching point of the video heads during playback to the center where the CH-1 and CH-2 envelopes overlap each other.

Fault due to incomplete adjustment:
Vertical sync signal is degraded and vertical jitter occurs.
Switching noise appears across the bottom of the screen.

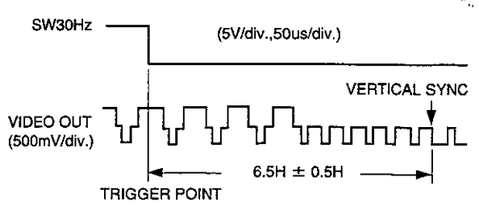
Test Equipment/Jigs and Connection Points
Oscilloscope CH-1: Video out jack
CH-2: PG2508-8(SW30Hz)
Alignment tape (30HMP2-1)

State of VCR
1) Play the alignment tape
2) Set to the X-value adjustment test mode.

Adjustment Point
F.FWD button(remote control)
REW button(remote control)

Adjustment Procedure
1) Play the alignment tape.
2) Press the "1"and "4" buttons of the remote control provided simultaneously and hold them, then press the "CHANNEL ▼" button of the VCR to set the VCR to the test mode. (Check that "TEST"appears in the display.)
3) Press the "F.FWD"and "REW" buttons of the remote control so the phase from the vertical sync to the trailing edge (trigger position) of the SW30Hz pulse is set to 6.5H ± 0.5H.
4) Press the "STOP" button to release the test mode.

Waveforms



<Conditions of oscilloscope>
Trigger with CH-2.
Set the sync slope to "-".

6-2. X-value adjustment (Figs. 9,10)

Purpose:
To ensure compatibility with other VCRs.

Fault due to incomplete adjustment:
When a tape recorded by another VCR is played back, the tracking is not optimized and noise appears on the screen.

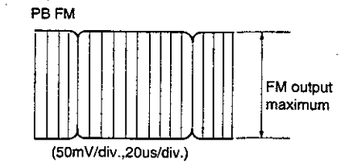
Test Equipment/Jigs and Connection Points
Oscilloscope CH-1: PG2508-1 (PB FM)
CH-2: PG2508-8 (SW30Hz)
Alignment tape (30HMP2-1)

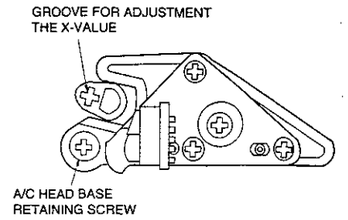
State of VCR
1) Play the alignment tape.
2) Set to the X-value adjustment test mode.

Adjustment Point
Groove for the adjustment X-value

Adjustment Procedure
1) Play the alignment tape.
2) Press the "1"and "4" buttons of the remote control provided simultaneously and hold them, then press the "CHANNEL ▼" button of the VCR to set the VCR to the test mode. (Check that "TEST"appears in the display.)
3) Loosen the screw holding the A/C head base (do not loosen it excessively).
4) Insert a screwdriver into the groove for adjusting the X-value and adjust so the FM output is maximum. There are two maximum FM output points when the groove for adjusting the X-value is turned. Adjust the FM output to a maximum when the groove is at the correct position as shown in the figure below.
5) Press the "STOP" button to release the test mode.

Waveforms





6-3. Vertical jitter adjustment

Purpose:
To suppress vertical jitter during slow and still play.

Fault due to incomplete adjustment:
Vertical jitter appears in the picture during slow and still play.

Test Equipment/Jigs and Connection Points
Monitor TV: Video output jack
Color bar generator: Video input jack
Blank tape

State of VCR
Record a color bar signal and play it using the same VCR.

Adjustment Point
CHANNEL ▲
CHANNEL ▼

Adjustment Procedure
<EP vertical jitter correction>: Record in the EP mode and play it back using the same VCR.
1) Press the "STILL(PAUSE)" button to set the VCR to the still play mode.
2) Use the CHANNEL buttons of the VCR to suppress vertical jitter of the picture.

<SP vertical jitter correction>: Record in the SP mode and play it back using the same VCR.
1) Press the "STILL(PAUSE)" button to set the VCR to the still play mode.
2) Use the CHANNEL buttons of the VCR to suppress vertical jitter in the picture.

6-4. Forward slow tracking preset adjustment

Purpose:
To adjust the timing with which the brake pulse of the capstan motor is generated during slow play so that noise is minimum.

Fault due to incomplete adjustment:
Noise appears during slow play and the picture is not clear.

Test Equipment/Jigs and Connection Points
Monitor TV: Video output jack
Color bar generator: Video input jack
Blank tape (T-120)

State of VCR
Slow tracking: Unplug the power cord to set the slow tracking to the center.

Adjustment Point
CHANNEL ▲
CHANNEL ▼

Adjustment Procedure
1) Record a signal on the middle of a T-120 blank tape in the EP mode and play it back using the same VCR.
2) Press the "1" and "4" buttons of the remote control (provided) simultaneously during playback and hold them, then press the "PLAY" button to set the VCR to the forward test slow mode.
3) Use the CHANNEL buttons so the slow feed noise appears across the bottom of the monitor screen and then it is driven out from the bottom of the screen.
4) Check that no noise appears on the monitor screen.
5) Press the "PLAY" button to return the VCR to the playback mode (the preset data is written to the EEPROM).
6) Perform the same procedure to perform slow tracking preset adjustment in the SP mode.
Do not press the reset switch after adjustment when the power is not turned on as the preset value could drift. If the preset value drifts, turn the power on and press the reset switch again for recovery.

6-4. Reverse slow tracking preset adjustment

Purpose:
To adjust the timing with which the brake pulse of the capstan motor is generated during reverse slow play so that noise is minimum.

Fault due to incomplete adjustment:
Noise appears during reverse slow play and the picture is not clear.

Test Equipment/Jigs and Connection Points
Monitor TV: Video output jack
Color bar generator: Video input jack
Blank tape (T-120)

State of VCR
Slow tracking: Unplug the power cord to set the slow tracking to the center.

Adjustment Point
CHANNEL ▲
CHANNEL ▼

Adjustment Procedure
1) Record a signal on the middle of a T-120 blank tape in the EP mode and play it back using the same VCR.
2) Press the "1" and "4" buttons of the remote control (provided) simultaneously during still play and hold them, then press the "PLAY" button to set the VCR to the reverse test slow mode.
3) Use the CHANNEL buttons so the slow feed noise appears across the bottom of the monitor screen and then it is driven out from the bottom of the screen.
4) Check that no noise appears on the monitor screen.
5) Press the "PLAY" button to return the VCR to the playback mode (the preset data is written to the EEPROM).
6) Perform the same procedure to perform reverse slow tracking preset adjustment in the SP mode.
Do not press the reset switch after adjustment when the power is not turned on as the preset value could drift. If the preset value drifts, turn the power on and press the reset switch again for recovery.

7. Audio Circuit Adjustment

7-1. Hi-Fi audio playback level check

Purpose:
To set the playback level of the Hi-Fi audio signal to the specified value.

Fault due to incomplete adjustment:
The appropriate volume cannot be obtained during playback.

Test Equipment/Jigs and Connection Points
Voltmeter
When checking L-CH:Audio output (L) jack
When checking R-CH:Audio output(R)jack
Hi-Fi alignment tape (24HMAF-2)

State of VCR
Play Hi-Fi alignment tape.

Adjustment procedure
Use the same checking procedure for both the L and R channels.
Check that the voltmeter reads -7.8dBs ± 3.0dBs.
If it cannot be confirmed, check the playback signal system.

8. List of Data in EEPROM and Initial Settings

The table below lists the data stored in ROM. It also shows the data set by shipment mode initialization and when the trouble display is cleared.

Information	Data memory ROM	List of initial data	
	IC903 VCR EEPROM	Shipment mode initial data	Clearing of trouble display
VCR plus+ guide channel data	Yes	Yes	No
Channel scan list data	Yes	Yes	No
VCR menu data	Yes	Yes	No
Clock set mode data	Yes [VT-UX6430A only]	Yes [VT-UX6430A only]	No
EDS channel data	Yes [VT-UX6430A only]	Yes [VT-UX6430A only]	No
D.S.T mode data	Yes [VT-UX6430A only]	Yes [VT-UX6430A only]	No
Time zone data	Yes [VT-UX6430A only]	Yes [VT-UX6430A only]	No
Cable box out channel data	Yes [VT-UX6430A only]	Yes [VT-UX6430A only]	No
Trouble display data	Yes	Yes	Yes
Slow tracking data	Yes	No (set by adjust)	No
Artificial V sync data	Yes	No (set by adjust)	No
Switching point data	Yes	No (set by adjust)	No
Cylinder rotation time data	Yes	Yes	No
Auto install data	Yes	Yes	No

9. List of Hidden Commands

The following tables list the mode setting commands during adjustment and EEPROM initial setting commands.

9-1. Mode setting commands during adjustment

Item	Mode in which command is accepted	Operation	Remarks
Tracking center	Play	Press the "1" and "4" buttons of the remote control simultaneously.	
X-value adjustment test mode	Play	Press the "1" and "4" buttons of the remote control simultaneously and press the "CHANNEL ▼" button on the VCR.	"tESt" appears
Forward test slow mode	Play	Press the "1" and "4" buttons of the remote control simultaneously and press the "PLAY" button on the VCR.	"SLOW" appears
Reverse test slow mode	Still play	Press the "1" and "4" buttons of the remote control simultaneously and press the "PLAY" button on the VCR.	"-SLOW" appears
Test mode 1	Stop	Press the "1" and "4" buttons of the remote control simultaneously and press the "STOP" button on the VCR.	

9-2. EEPROM initialization commands

Item	Mode in which command is accepted	Operation	Remarks
Shipment mode initial setting	EJECT	Press the "REC" button on the VCR and hold it, then press the "RESET" button used to initialize the microprocessor.	Hold the "REC" button depressed and release it after the display lights.
Clearing of trouble display	———	Press the "CHANNEL ▼" button on the VCR and hold it, then press the "RESET" button used to initialize the microprocessor.	Hold the "CHANNEL ▼" button depressed and release it after the display lights.

10. Initial Settings of IC903 (EEPROM)

The following shows the on-screen display and modes of switches when IC903 (EEPROM) is initialized.

[A] MENU
- 1 LANGUAGE [ENGLISH]

[B] VCR SETUP MENU
- 1 AUTO BLUE [ON]

[C] CHANNEL PRESET
- 1 CH SOURCE [CATV1]

[D] CLOCK SETUP
- 1 SET MODE [AUTO]
- 2 TIME ZONE [AUTO]
- 3 D.S.T MODE [AUTO]

[E] AUDIO SETUP
- 1 AUDIO [HIFI]
- 2 STEREO/MONO [STEREO]
- 3 SAP [OFF]

[F] Other modes
- Recording speed : EP

[G] Front panel switch
- ANT. OUT : RFCH 03

11. Caution When Replacing IC903 (VCR EEPROM)

After replacing IC903 (VCR EEPROM), execute the VCR initial settings and then perform the following adjustments.

	Adjustment	Page
1	Vertical jitter adjustment	P3-6
2	Forward slow tracking adjustment	P3-6
3	Reverse slow tracking adjustment	P3-6

12. Cylinder Rotation Accumulated Hour Display

This VCR can display the accumulated hours of cylinder rotation for owner's reference as to when the cylinder needs to be replaced.

1. Display method

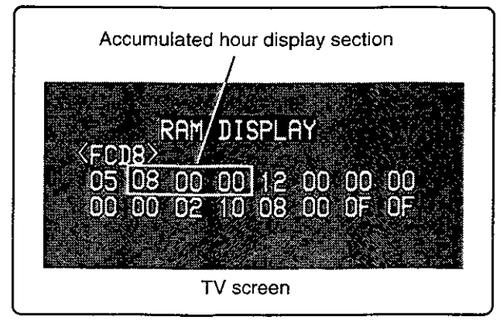
Hold down the "1" and "4" buttons on the remote control simultaneously with power on and with no cassette inserted, and then press the "CHANNEL ▼" button on the VCR. (Press the guide button to release the function.)

2. Method for resetting accumulated hours

Hold down the "REC" button on the VCR with power on and with no cassette inserted, and then press the reset button for the microprocessor. (After releasing the reset button, hold down the "REC" until "--:--" appears in the display.)

3. Example of display

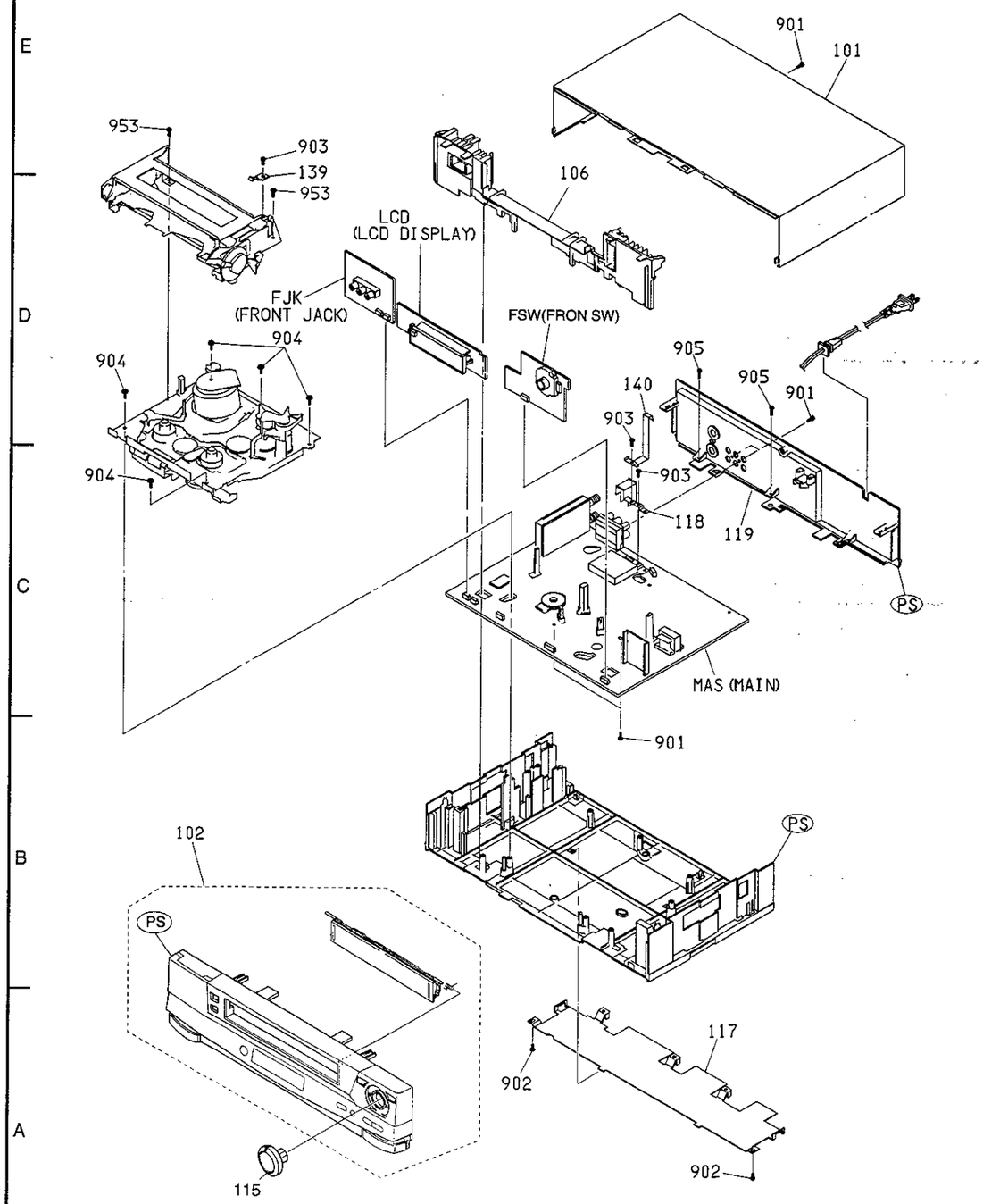
Make sure you understand the RAM display section on the screen.
Example: Read "08 00 00" in reverse as 000008 hours.



CHAPTER 4 EXPLODED VIEW

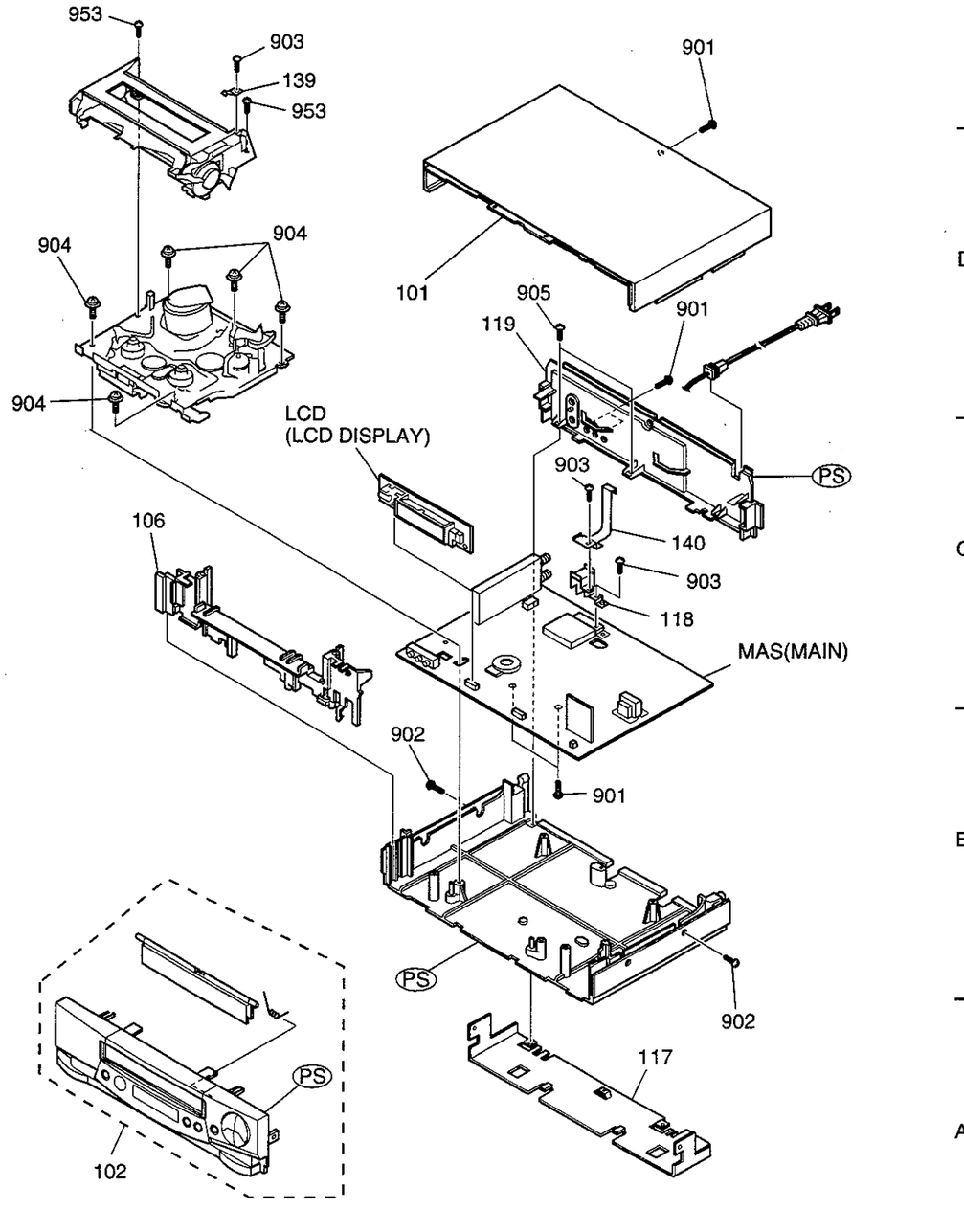
1. CABINET SECTION

NOTE: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

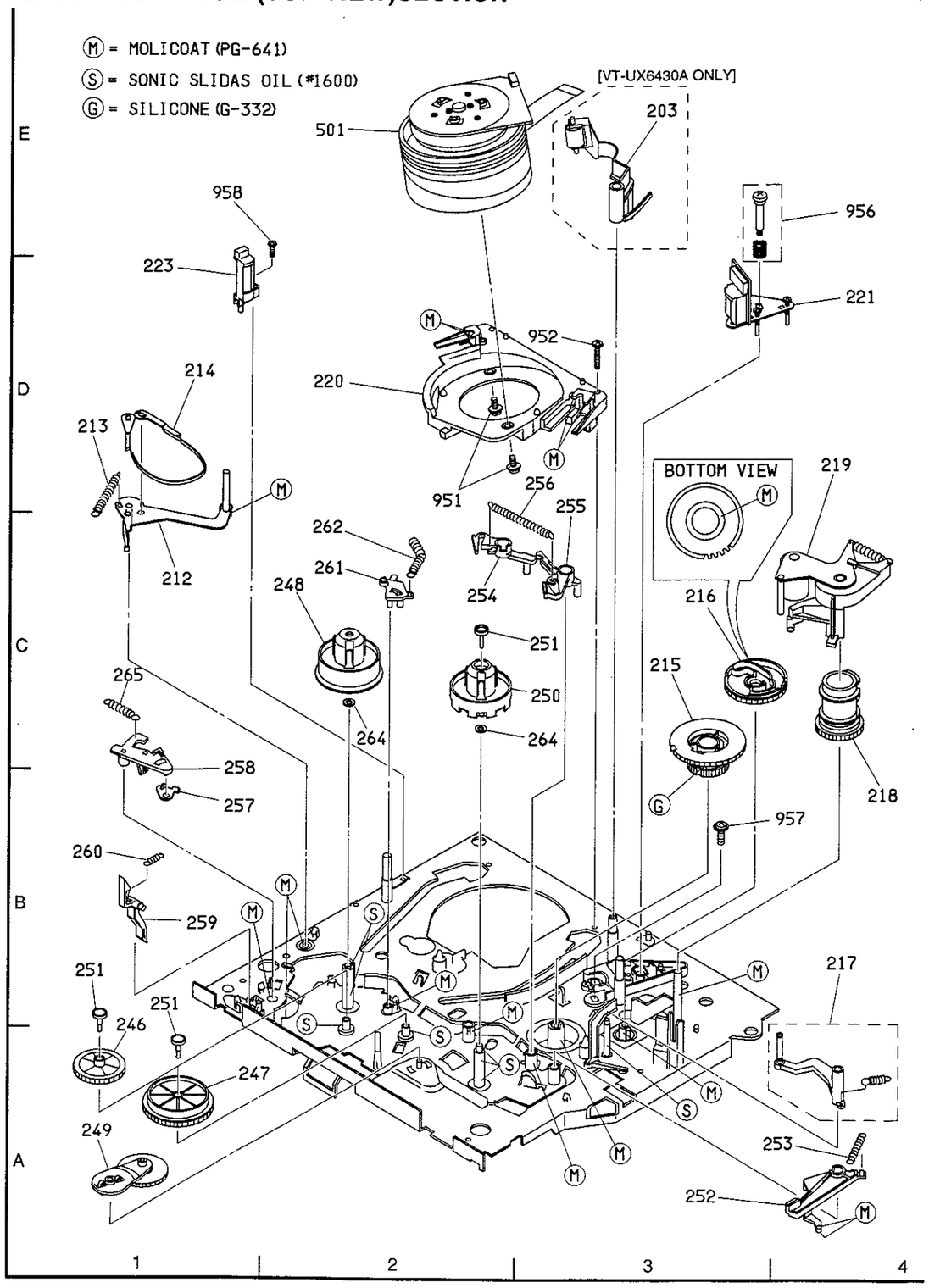


2. CABINET SECTION

NOTE: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

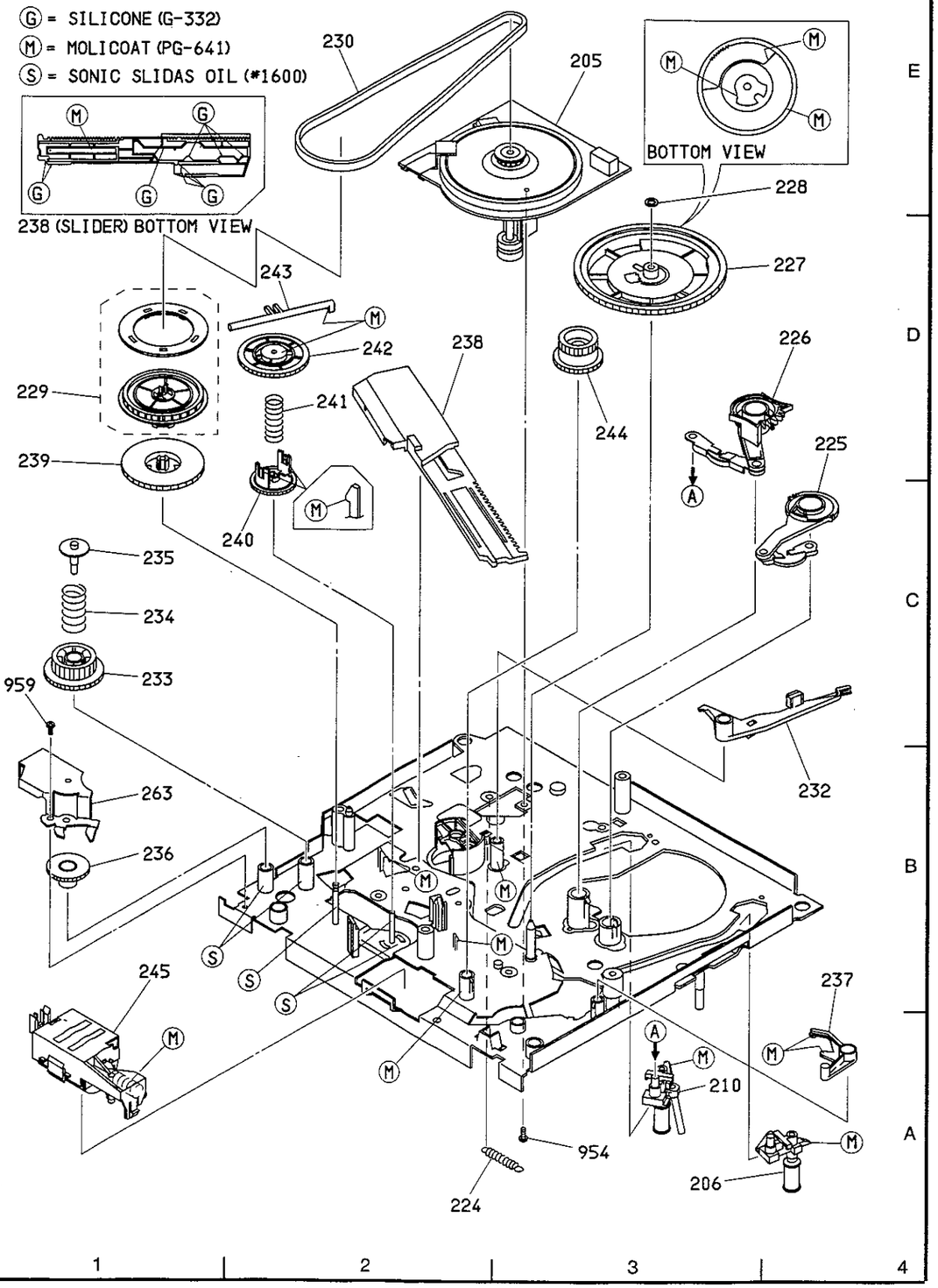


3. US-MECHANISM (TOP VIEW)SECTION



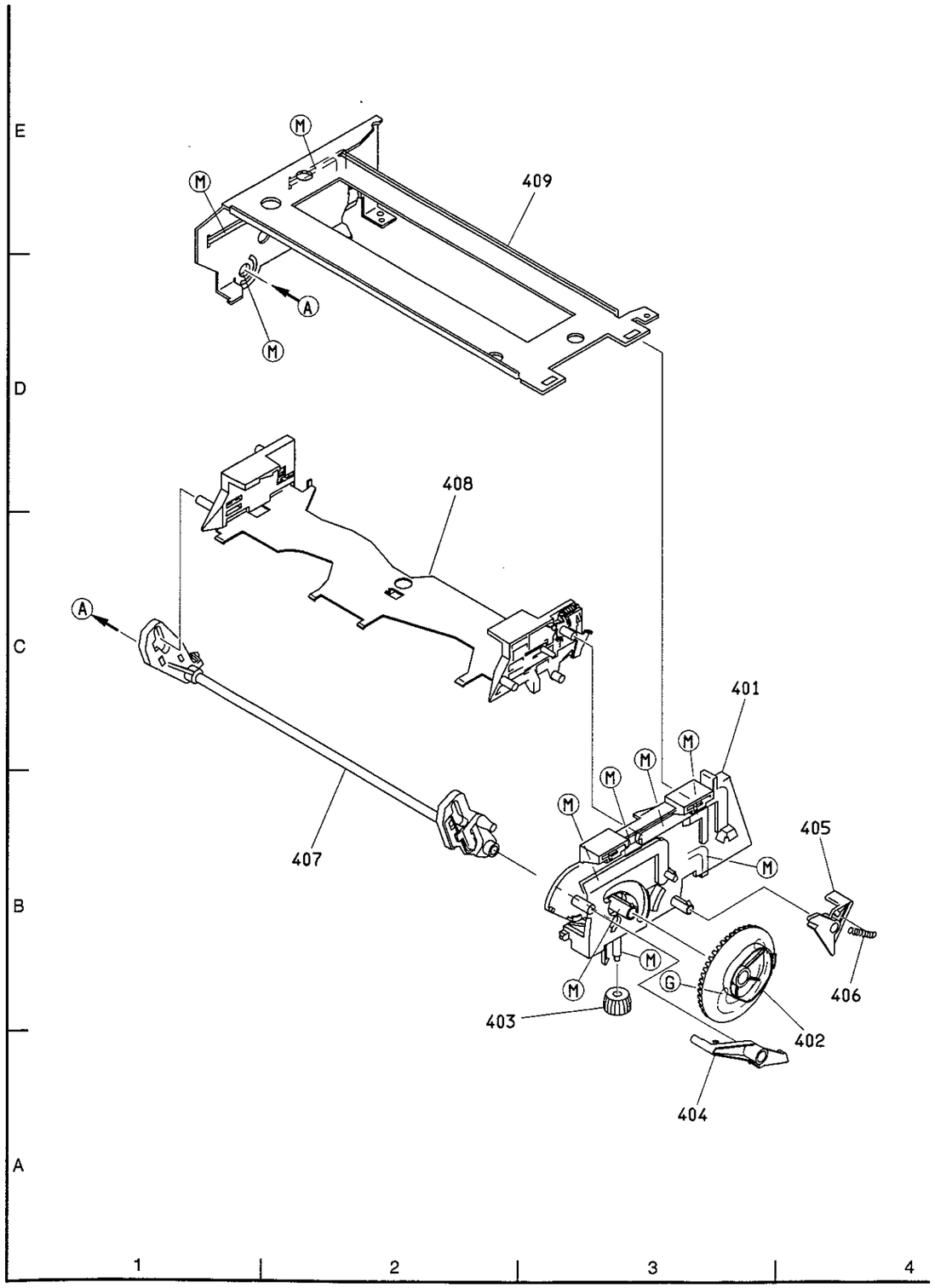
4 - 3

4. US-MECHANISM (BOTTOM VIEW)SECTION



4 - 4

5. US-FL MECHANISM SECTION



VT-UX6430A/FX6410A

CHAPTER 5 REPLACEMENT PARTS LIST

1. MECHANICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION	
		MECHANISM SECTION	
101	QA11516	COVER, TOP	[UX6430A]
101	QA13221	COVER, TOP	[FX6410A]
102	PH18281	PANEL, FRONT (HEPM)	[UX6430A]
102	PH18291	PANEL, FRONT (HEPM)	[FX6410A]
106	NT10486	PIECE, FRONT (HEPM)	[FX6410A]
106	NT10733	PIECE, FRONT (HEPM)	[UX6430A]
115	PC15921	KNOB, SHUTTLE(HEPM)	[UX6430A]
117	QA11142	COVER, BOTTOM(HEPM)	[FX6410A]
117	QA11521	COVER, BOTTOM(HEPM)	[UX6430A]
118	MD11281	COVER, CBA	
119	PH13241	PANEL, REAR (HEPM)	[FX6410A]
119	PH14291	PANEL, REAR (HEPM)	[UX6430A]
139	4826834	SPRING, EARTH	
140	MD11602	PLATE, EARTH	
203	KX11661	CLEANING, HEAD	[UX6430A]
205	GP10254	MOTOR, CAPSTAN	
206	KX12294	BASE, GUIDE ROLLER (I)	
210	KX12302	BASE, GUIDE ROLLER(O)	
212	KX11531	ARM, TENSION	
213	KL10662	SPRING	
214	KX11631	BAND, TENSION	
215	KF10641	GEAR, DRIVE	
216	KF12281	GEAR, IDLER	
217	KX12662	ARM, OUT	
218	KX11581	GEAR, SPIRAL	
219	KX11554	ARM, PINCH ROLLER	
220	KX11451	BASE, CYLINDER	
221	KX11944	AC HEAD	
223	5423082	FE HEAD	
224	KL10711	SPRING	
225	KX17881	GEAR, LOADING (L)	
226	KX17891	GEAR, LOADING (R)	
227	KF10673	GEAR, CAM	
228	4344643	WASHER	
229	KX17581	PULLEY	
230	KX18201	BELT	
232	KX12031	BRAKE	
233	KF10571	GEAR, CHANGE	
234	KL10771	SPRING	
235	KX12001	STOPPER, SPRING	
236	KF10561	GEAR, IDLER	
237	KX11831	ARM, OPERATION	
238	KX11362	SLIDER	
239	KF10551	GEAR, TRANS	
240	KF10501	GEAR, DRIVE	
241	KL10773	SPRING	
242	KF10513	GEAR, CHANGE	
243	KX11411	ARM, CHANGE	
244	KX11371	GEAR	
245	KX11892	MOTOR, LOADING	
246	KF10521	GEAR, IDLER 1	
247	KF10532	GEAR, IDLER 2	
248	KH10152	REEL, TABLE(S)	
249	KX11423	ARM	
250	KH10161	REEL, TABLE(T)	
251	KX11991	STOPPER	
252	KX11861	BRAKE	
253	KL10782	SPRING, BRAKE	
254	KX11875	BRAKE, L	
255	KX11883	BRAKE, R	
256	KL10792	SPRING, BRAKE	
257	KF10542	GEAR, JOG	
258	KX13132	ARM, JOG	
259	KX11841	ARM, REC	
260	6542485	SPRING	
261	KX11811	BRAKE, SUB	
262	KL10903	SPRING, SUB	
263	KX12461	BRACKET, BASE	
264	MN11571	WASHER	
265	KL11062	SPRING, JOG	
401	KX11773	BRACKET (R)	
402	KF10682	GEAR 1	
403	KF10691	GEAR 2	
404	KX11752	ARM, DOOR	
405	KX11761	ARM, SWITCH	
406	6323723	SPRING	
407	KX11931	ARM, DRIVE	
408	KX11922	HOLDER, CASSETTE	
409	KX11741	BRACKET(L)	
501	HX10511	CYLINDER ASSY(CY-U6N3)	
901	8699410	SCREW(3X10)	
902	8679408	SCREW (3.0X8)	[FX6410A]
902	MK10271	SCREW(3X12DT)	[UX6430A]
903	8671306	SCREW(2.6X6)	
904	7781132	BT SCREW	
905	7784323	SCREW(3X8)	
951	8652408	SCREW (PSW3X8)	
952	0671310	DT SCREW-2.6MMDX10MM	
953	8671306	SCREW(2.6X6)	
954	8691306	BT SCREW 2.6MM	
956	KX12443	SCREW	
957	MJ10341	SCREW(M2.6)	
958	0671308	DT SCREW-2.6MMDX8MM	
959	0671305	DT SCREW-2.6MMDX5MM	
		ACCESSARIES	
802	EW10251	CORD, RF	
803	HL11131	REMOTE HAND SET	

2. ELECTRICAL PARTS LIST

SYMBOL NO	P-NO	DESCRIPTION
		CAPACITORS
C0201	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0202	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0206	0800178	ELECTROLYTIC 4.7UF 35V
C0207	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0208	0890047	CERAMIC CAPACITOR 0.047UF+-20% 16V(HEPM)
C0209	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0211	0800138	ELECTROLYTIC 47UF 6.3V
C0213	0254458	ELECTROLYTIC 3.3UF+-20% 50V
C0214	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0215	0800138	ELECTROLYTIC 47UF 6.3V
C0216	0209948	CERAMIC CHIP 330PF+-5% 50V
C0218	0800179	ELECTROLYTIC 10UF 16V
C0219	0890043	CERAMIC DISC 0.01UF+-20% 16V
C0220	0890043	CERAMIC DISC 0.01UF+-20% 16V
C0221	0800112	ELECTROLYTIC 2.2UF 50V
C0222	0893039	CERAMIC CHIP 4700PF+-10% 50V
C0223	0800118	ELECTROLYTIC 4.7UF 35V
C0224	0800122	ELECTROLYTIC 10UF 16V
C0226	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0227	0800107	ELECTROLYTIC 0.47UF 50V
C0228	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0230	0893002	CERAMIC CHIP 0.033UF+-10% 16V
C0233	0800179	ELECTROLYTIC 10UF 16V
C0234	0800185	ELECTROLYTIC 47UF 6.3V
C0235	0890046	CERAMIC DISC 0.1UF+80-20% 50V
C0236	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0237	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0238	0800176	ELECTROLYTIC 2.2UF 50V
C0239	0207444	ELECTROLYTIC 1.0UF 50V
C0240	0207444	ELECTROLYTIC 1.0UF 50V
C0241	0207444	ELECTROLYTIC 1.0UF 50V
C0242	0800179	ELECTROLYTIC 10UF 16V
C0243	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0244	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0245	0800115	ELECTROLYTIC 3.3UF 50V
C0246	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0247	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0249	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0250	0209937	CERAMIC CHIP 39PF+-5% 50V
C0251	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0255	0209943	CERAMIC DISC 120PF+-5%
C0256	0209933	CERAMIC CHIP 18PF+-5% 50V
C0257	0209927	CERAMIC CHIP 7.0PF+-0.5% 50V
C0259	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0262	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0263	0209931	CERAMIC CHIP 12PF+-5% 50V
C0273	0209937	CERAMIC CHIP 39PF+-5% 50V
C0298	0893035	CERAMIC CHIP 2200PF+-10% 50V
C0402	0800117	ELECTROLYTIC 4.7UF 25V
C0403	0800185	ELECTROLYTIC 47UF 6.3V
C0404	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0405	0800117	ELECTROLYTIC 4.7UF 25V
C0406	0893035	CERAMIC CHIP 2200PF+-10% 50V
C0407	0800122	ELECTROLYTIC 10UF 16V
C0408	0800122	ELECTROLYTIC 10UF 16V
C0409	0893031	CERAMIC CHIP 1000PF+-10% 50V
C0410	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0411	0800175	ELECTROLYTIC 1.0UF 50V
C0413	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0414	0800127	ELECTROLYTIC 22UF 10V
C0419	0800117	ELECTROLYTIC 4.7UF 25V
C0420	AN10332R	CAPACITOR 0.027UF+-5% 100V
C0421	0209946	CERAMIC CHIP 220PF+-5% 50V
C0422	0800145	ELECTROLYTIC 100UF 16V
C0424	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0427	0893037	CERAMIC CHIP 3300PF+-10% 50V
C0429	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0437	0800011	ELECTROLYTIC 4.7UF 35V
C0501	0800122	ELECTROLYTIC 10UF 16V
C0502	0800118	ELECTROLYTIC 4.7UF 35V
C0503	0800118	ELECTROLYTIC 4.7UF 35V
C0504	0800122	ELECTROLYTIC 10UF 16V
C0505	0800122	ELECTROLYTIC 10UF 16V
C0506	0800135	ELECTROLYTIC 33UF 16V
C0507	0800135	ELECTROLYTIC 33UF 16V
C0508	0800144	ELECTROLYTIC 100UF 10V
C0509	0800144	ELECTROLYTIC 100UF 10V
C0510	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0512	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0513	0800139	ELECTROLYITC 47UF 10V
C0514	0800118	ELECTROLYTIC 4.7UF 35V
C0516	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0517	0893088	CERAMIC CHIP 0.015UF+-10% 16V
C0518	0800122	ELECTROLYTIC 10UF 16V
C0520	0893088	CERAMIC CHIP 0.015UF+-10% 16V
C0528	0893088	CERAMIC CHIP 0.015UF+-10% 16V
C0529	0800128	ELECTROLYTIC 22UF 16V
C0530	0800122	ELECTROLYTIC 10UF 16V
C0531	0800122	ELECTROLYTIC 10UF 16V
C0532	0800141	ELECTROLYTIC 47UF 16V
C0533	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0536	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0601	0207441	ELECTROLYTIC 2.2UF 35V
C0604	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0606	0893031	CERAMIC CHIP 1000PF+-10% 50V
C0607	0209938	CERAMIC CHIP 47PF+-5% 50V
C0608	0209942	CERAMIC CHIP 100PF+-5% 50V
C0609	0800179	ELECTROLYTIC 10UF 16V
C0611	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0612	0800182	ELECTROLYTIC 22UF 16V
C0614	0893031	CERAMIC CHIP 1000PF+-10% 50V
C0615	0800042	ELECTROLYTIC 47UF 25V
C0621	0890038	CERAMIC DISC 3300PF+-20% 16V
C0623	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0624	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0629	0800185	ELECTROLYTIC 47UF 6.3V
C0701	0893053	CERAMIC CHIP 0.047UF+-10% 50V
⚠ C0851	AN10201S	FILM CAPACITOR 0.1UF+-20% 250V
⚠ C0857	AJ00583F	CERAMIC CAPACITOR 2200PF+-20% 250V(HEPM)
⚠ C0858	AJ00583F	CERAMIC CAPACITOR 2200PF+-20% 250V(HEPM)
C0859	0800206	ELECTROLYTIC 47UF 35V
C0860	AN10401R	CAPACITOR 0.047UF+-10% 250V
C0862	AL10193	ELECTROLYTIC 82UF+-20% 200V(HEPM)
C0863	0880031	MYLAR 1000PF+-10% 50V
C0865	1143005	CERAMIC CAPACITOR 220PF+-5% 1KV
C0866	0209950	CERAMIC CHIP 470PF+-5% 50V
C0867	0893053	CERAMIC CHIP 0.047UF+-10% 50V
C0871	0254403	CAPACITOR 22UF+-20% 50V
C0872	AL10482S	ELECTROLYTIC 820UF+-20% 25V(HEPM)
C0873	0800354	ELECTROLYTIC 470UF 25V
C0874	AL10482S	ELECTROLYTIC 820UF+-20% 25V(HEPM)[6410A]
C0874	AL10483S	ELECTROLYTIC 2200UF+-20% 16V(HEPM[6430A]
C0875	0800352	ELECTROLYTIC 470UF 10V
C0876	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0877	AJ10131R	CERAMIC CAPACITOR 470PF+-10% 500V
⚠ C0881	0800308	ELECTROLYTIC 33UF 16V
⚠ C0884	0800325	CAPASITOR 100UF+-20% 10V

SYMBOL NO	P-NO	DESCRIPTION
C0887	0890045	CERAMIC DISC 0.047UF+80-20% 50V
C0896	0800291	ELECTROLYTIC 10UF 16V
C0902	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0904	0800358	ELECTROLYTIC 1000UF+-20% 6V
C0905	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0906	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0907	0209927	CERAMIC CHIP 7.0PF+-0.5% 50V
C0908	0209927	CERAMIC CHIP 7.0PF+-0.5% 50V
C0909	0209932	CERAMIC CHIP 15PF+-5% 50V
C0910	0209932	CERAMIC CHIP 15PF+-5% 50V
C0912	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0913	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0914	0800033	ELECTROLYTIC 33UF 25V
C0915	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0916	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0919	0893053	CERAMIC CHIP 0.047UF+-10% 50V
C0920	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0922	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0923	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C0924	0209938	CERAMIC CHIP 47PF+-5% 50V
C0925	0209938	CERAMIC CHIP 47PF+-5% 50V
C0926	0209938	CERAMIC CHIP 47PF+-5% 50V
C0928	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C0940	0209938	CERAMIC CHIP 47PF+-5% 50V
C0941	0893062	CERAMIC CHIP 1UF+80-20% 16V
C0945	0890046	CERAMIC DISC 0.1UF+80-20% 50V
C0946	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0947	0893004	CERAMIC CHIP 0.047UF+-10% 16V
C0950	0893013	CERAMIC CHIP 0.22UF+-10% 16V
C0951	0893004	CERAMIC CHIP 0.047UF+-10% 16V
C0955	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0956	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0957	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C0982	0893053	CERAMIC CHIP 0.047UF+-10% 50V
C1103	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1104	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1106	0800185	ELECTROLYTIC 47UF 6.3V
C1107	0890043	CERAMIC DISC 0.01UF+-20% 16V
C1108	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C1111	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C1112	0893013	CERAMIC CHIP 0.22UF+-10% 16V
C1114	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1115	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1116	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1117	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1119	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1120	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1121	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1122	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1124	0893031	CERAMIC CHIP 1000PF+-10% 50V
C1125	0800185	ELECTROLYTIC 47UF 6.3V
C1126	0890046	CERAMIC DISC 0.1UF+80-20% 50V
C1401	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C1402	0209943	CERAMIC DISC 120PF+-5%
C1403	0800118	ELECTROLYTIC 4.7UF 35V
C1404	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C1405	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C1406	0893013	CERAMIC CHIP 0.22UF+-10% 16V
C1409	0209937	CERAMIC CHIP 39PF+-5% 50V
C1410	0209935	CERAMIC CHIP 27PF+-5% 50V
C1411	0209945	CERAMIC DISC 180PF+-5% 50V
C1413	0893065	CERAMIC CHIP 0.047UF+80-20% 25V
C1414	0800122	ELECTROLYTIC 10UF 16V
C1415	0800118	ELECTROLYTIC 4.7UF 35V
C1424	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C1425	0209931	CERAMIC CHIP 12PF+-5% 50V
C1427	0893039	CERAMIC CHIP 4700PF+-10% 50V
C1701	0800185	ELECTROLYTIC 47UF 6.3V
C1702	0890103	CERAMIC DISC 47000PF+80-20% 12V
C1703	0890103	CERAMIC DISC 47000PF+80-20% 12V
C1704	0890103	CERAMIC DISC 47000PF+80-20% 12V
C1705	0890035	CERAMIC DISC 1000PF+-10% 50V
C1706	0800185	ELECTROLYTIC 47UF 6.3V
C1801	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1802	0254373	CAPACITOR 10UF+-10% 16V(HEPM)
C1803	0800109	ELECTROLYTIC 1.0UF 50V
C1805	0800112	ELECTROLYTIC 2.2UF 50V
C1806	0893013	CERAMIC CHIP 0.22UF +-10% 16V
C1807	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1808	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1809	0893091	CERAMIC CHIP 0.022UF+-10% 16V
C1810	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C1811	0800138	ELECTROLYTIC 47UF 6.3V
C1812	0800122	ELECTROLYTIC 10UF 16V
C1813	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C1814	0254372	CAPACITOR 3.3UF+-10% 35V(HEPM)
C1896	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C2101	0893031	CERAMIC CHIP 1000PF+-10% 50V
C2102	0893031	CERAMIC CHIP 1000PF+-10% 50V
C2501	0893037	CERAMIC CHIP 3300PF+-10% 50V
C2502	0893037	CERAMIC CHIP 3300PF+-10% 50V
C2503	0800351	ELECTROLYTIC 470UF 6.3V
C2507	0800015	ELECTROLYTIC 10UF 16V
C2508	0893037	CERAMIC CHIP 3300PF+-10% 50V
C2509	0800041	ELECTROLYTIC 47UF 16V
C2513	0800352	ELECTROLYTIC 470UF 10V
C2514	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2517	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2518	0800044	ELECTROLYTIC 47UF 50V
C2521	0800041	ELECTROLYTIC 47UF 16V
C2522	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2524	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2532	0893031	CERAMIC CHIP 1000PF+-10% 50V
C2533	0893031	CERAMIC CHIP 1000PF+-10% 50V
C2536	0890044	CERAMIC DISC 0.022UF+80-20% 25V
C2545	0800179	ELECTROLYTIC 10UF 16V
C2550	0800041	ELECTROLYTIC 47UF 16V
C2551	0893044	CERAMIC CHIP 0.01UF+-10% 50V
C2552	0209930	CERAMIC CHIP 10PF+-0.5% 50V
C2556	0893042	CERAMIC CHIP 6800PF+-10% 50V
C2557	0893042	CERAMIC CHIP 6800PF+-10% 50V
C2901	0893062	CERAMIC CHIP 1UF+80-20% 16V
C2902	0890045	CERAMIC DISC 0.047UF+80-20% 50V
C2903	0893006	CERAMIC CHIP 0.068UF+-10% 16V
C2904	0209904	CERAMIC DISC 560PF+-5% 50V
C2905	0893042	CERAMIC CHIP 6800PF+-10% 50V
C2906	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C2907	0893062	CERAMIC CHIP 1UF+80-20% 16V
C2908	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C2909	0893008	CERAMIC CHIP 0.1UF +-10% 16V
C2910	0209934	CERAMIC CHIP 22PF+-5% 50V
C2911	0209934	CERAMIC CHIP 22PF+-5% 50V
		RESISTORS
R0204	0103838	RESISTOR CHIP 390 OHM+-5% 0.1W
R0205	0103838	RESISTOR CHIP 390 OHM+-5% 0.1W
R0212	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0213	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0215	0103842	CHIP RESISTOR 820 OHM+-5% 0.1W

SYMBOL NO	P-NO	DESCRIPTION
R0216	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0217	0103860	CHIP RESISTOR 27KOHM+-5% 0.1W
R0229	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R0236	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0238	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0239	0103852	CHIP RESISTOR 5.6KOHM+-5% 0.1W
R0241	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0249	0103868	CHIP RESISTOR 120KOHM+-5% 0.1W
R0253	0103841	CHIP RESISTOR 680 OHM+-5% 0.1W
R0258	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R0263	0103881	CHIP RESISTOR 2.2MOHM+-10% 0.1W
R0284	0700077	CARBON FILM 560KOHM+-5% 1/8W
R0402	0103860	CHIP RESISTOR 27KOHM+-5% 0.1W
R0407	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R0408	0103861	CHIP RESISTOR 33KOHM+-5% 0.1W
R0409	0103873	CHIP RESISTOR 330KOHM+-5% 0.1W
R0410	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0413	0103861	CHIP RESISTOR 33KOHM+-5% 0.1W
R0414	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0418	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0419	0103861	CHIP RESISTOR 33KOHM+-5% 0.1W
R0420	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0421	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0422	0103812	CHIP RESISTOR 2.7OHM+-10% 0.1W
R0423	0700057	CARBON FILM 18KOHM+-5% 1/8W
R0429	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0430	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0431	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0432	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0434	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0450	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R0501	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R0502	0103844	CHIP RESISTOR 1.2KOHM+-5% 0.1W
R0503	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R0504	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0505	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R0506	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0507	0700047	CARBON FILM 3.3KOHM+-5% 1/8W
R0520	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R0521	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0522	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R0523	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0526	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R0527	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R0534	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R0602	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0605	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0615	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0616	0700073	CARBON FILM 270KOHM+-5% 1/8W
R0621	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0622	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0623	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0624	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0625	0700046	CARBON FILM 2.7KOHM+-5% 1/8W
R0629	0103837	CHIP RESISTOR 330 OHM+-5% 0.1W
R0630	0103837	CHIP RESISTOR 330 OHM+-5% 0.1W
R0631	0103870	CHIP RESISTOR 180KOHM+-5% 0.1W
R0632	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0633	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R0634	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0635	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0636	0700047	CARBON FILM 3.3KOHM+-5% 1/8W
R0637	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R0705	0103842	CHIP RESISTOR 820 OHM+-5% 0.1W
R0706	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0707	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0708	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0709	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R0715	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0716	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R0717	0700029	CARBON FILM 150 OHM+-5% 1/8W
R0718	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R0719	0700055	CARBON FILM 12KOHM+-5% 1/8W
R0721	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
⚠ R0851	AT10401M	RESISTOR 4.7MOHM+-10% 1/2W
R0854	0116664	CHIP RESISTOR 68KOHM+-5% 2W
R0855	0116664	CHIP RESISTOR 68KOHM+-5% 2W
R0856	0116664	CHIP RESISTOR 68KOHM+-5% 2W
R0857	0116664	CHIP RESISTOR 68KOHM+-5% 2W
R0859	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0860	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R0861	0700038	CARBON FILM 680 OHM+-5% 1/8W
R0862	AT10246S	RESISTOR 0.33 OHM+-5% 1W
R0863	0700022	CARBON FILM 39OHM+-5% 1/8W
R0864	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0865	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R0866	0700038	CARBON FILM 680 OHM+-5% 1/8W
R0867	0700032	CARBON FILM 220 OHM+-5% 1/8W
R0868	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R0869	0104114	CHIP RESISTOR 3.3KOHM+-1% 0.1W
R0870	0105572	METAL FILM RESISTOR 2.7KOHM+-1% 1/10W
R0872	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R0873	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R0874	0700058	CARBON FILM 22KOHM+-5% 1/8W
R0875	0700035	CARBON FILM 390 OHM+-5% 1/8W
R0877	0700037	CARBON FILM 560 OHM+-5% 1/8W
R0878	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0879	0103857	CHIP RESISTOR 15KOHM+-5% 0.1W
R0885	0700056	CARBON FILM 15KOHM+-5% 1/8W
R0886	0700056	CARBON FILM 15KOHM+-5% 1/8W
R0887	0103848	CHIP RESISTOR 2.7KOHM+-5% 0.1W
R0889	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0892	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R0893	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0896	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0897	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R0901	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0902	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0903	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0904	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0905	0700054	CARBON FILM 10KOHM+-5% 1/8W
R0906	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0907	0700054	CARBON FILM 10KOHM+-5% 1/8W
R0908	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R0909	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R0910	0700063	CARBON FILM 47KOHM+-5% 1/8W
R0911	0700067	CARBON FILM 100KOHM+-5% 1/8W
R0914	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0915	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0918	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0924	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R0925	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R0926	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R0928	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0929	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0932	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0934	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
R0936	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0937	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0938	0103839	CHIP RESISTOR 470 OHM+-5% 0.1W

SYMBOL NO	P-NO	DESCRIPTION
R0939	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0940	0103839	CHIP RESISTOR 470 OHM+-5% 0.1W
R0941	0700051	CARBON FILM 5.6KOHM+-5% 1/8W
R0945	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0946	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0947	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0948	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0950	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0952	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0953	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R0955	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0956	0700036	CARBON FILM 470 OHM+-5% 1/8W
R0957	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R0960	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0964	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0967	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0968	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0969	0103838	RESISTOR CHIP 390 OHM+-5% 0.1W
R0970	0103838	RESISTOR CHIP 390 OHM+-5% 0.1W
R0972	0103851	CHIP RESISTOR 4.7KOHM+-5% 0.1W
⚠ R0976	0101725	CHIP RESISTOR 2.2 OHM+-5% 1/4W
R0977	0700067	CARBON FILM 100KOHM+-5% 1/8W
R0978	0104111	CHIP RESISTOR 10KOHM+-1% 1/10W
R0983	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0984	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0985	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0986	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0989	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R0991	0103845	CHIP RESISTOR 1.5KOHM+-5% 0.1W
R0992	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0993	0103854	CHIP RESISTOR 8.2KOHM+-5% 0.1W
R0995	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R0996	0103854	CHIP RESISTOR 8.2KOHM+-5% 0.1W
R0997	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R0998	0103840	CHIP RESISTOR 560 OHM+-5% 0.1W
R0999	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R1103	0103860	CHIP RESISTOR 27KOHM+-5% 0.1W
R1120	0103858	CHIP RESISTOR 18KOHM+-5% 0.1W
R1403	0700045	CARBON FILM 2.2KOHM+-5% 1/8W
R1405	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R1406	0700024	CARBON FILM 56 OHM+-5% 1/8W
R1407	0103837	CHIP RESISTOR 330 OHM+-5% 0.1W
R1409	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R1410	0103846	CHIP RESISTOR 1.8KOHM+-5% 0.1W
R1412	0103875	CHIP RESISTOR 470KOHM+-5% 0.1W
R1414	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R1416	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R1418	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R1430	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R1433	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R1434	0103879	CHIP RESISTOR 1MOHM+-5% 0.1W
R1438	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R1701	0700054	CARBON FILM 10KOHM+-5% 1/8W
R1702	0700063	CARBON FILM 47KOHM+-5% 1/8W
R1703	0700039	CARBON FILM 820 OHM+-5% 1/8W[6430A]
R1703	0700032	CARBON FILM 220 OHM+-5% 1/8W[6410A]
R1704	0700039	CARBON FILM 820 OHM+-5% 1/8W[6430A]
R1704	0700032	CARBON FILM 220 OHM+-5% 1/8W[6410A]
R1708	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R1709	0700038	CARBON FILM 680 OHM+-5% 1/8W
R1710	0700038	CARBON FILM 680 OHM+-5% 1/8W
R1711	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R1712	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R1713	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R1714	0700049	CARBON FILM 4.7KOHM+-5% 1/8W
R2101	0700059	CARBON FILM 27KOHM+-5% 1/8W
R2102	0103867	CHIP RESISTOR 100KOHM+-5% 0.1W
R2103	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2104	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R2105	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2106	0700034	CARBON FILM 330 OHM+-5% 1/8W
R2107	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2108	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2109	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2110	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2111	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2112	0103847	CHIP RESISTOR 2.2KOHM+-5% 0.1W
R2113	0700034	CARBON FILM 330 OHM+-5% 1/8W
R2114	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R2115	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2116	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2117	0103859	CHIP RESISTOR 22KOHM+-5% 0.1W
R2501	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W(MAS)
R2501	0700054	CHIP RESISTOR 10KOHM+-5% 1/8W(FJK)
R2502	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W(MAS)
R2502	0700052	CHIP RESISTOR 6.8KOHM+-5% 0.1W(FJK)
R2503	0103893	CHIP RESISTOR 75 OHM+-5% 1/8W
R2504	0103893	CHIP RESISTOR 75 OHM+-5% 1/8W(MAS)
R2504	0700054	CHIP RESISTOR 10KOHM+-5% 1/8W(FJK)
R2505	0700038	CARBON FILM 680 OHM+-5% 1/8W(FJK)
R2506	0700057	CARBON FILM 18KOHM+-5% 1/8W(FJK)
R2507	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R2508	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
R2509	0700047	CARBON FILM 3.3KOHM+-5% 1/8W
R2510	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W(MAS)
R2510	0700062	CHIP RESISTOR 39KOHM+-5% 0.1W(FJK)
R2511	0103849	CHIP RESISTOR 3.3KOHM+-5% 0.1W
R2512	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W
R2514	0101836	CARBON FILM 1.8KOHM+-5% 1/4W
R2524	0700047	CARBON FILM 3.3KOHM+-5% 1/8W
R2525	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R2526	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R2529	0103893	CHIP RESISTOR 75 OHM+-5% 1/8W
R2534	0103850	CHIP RESISTOR 3.9KOHM+-5% 0.1W
R2536	0103839	CHIP RESISTOR 470 OHM+-5% 0.1W
R2542	0700027	CARBON FILM 100 OHM+-5% 1/8W
R2544	0700054	CARBON FILM 10KOHM+-5% 1/8W
R2546	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2551	0103831	CHIP RESISTOR 100 OHM+-5% 0.1W
R2552	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R2553	0103835	CHIP RESISTOR 220 OHM+-5% 0.1W
R2554	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2701	0700057	CARBON FILM 18KOHM+-5% 1/8W
R2702	0700054	CARBON FILM 10KOHM+-5% 1/8W
R2703	0700057	CARBON FILM 18KOHM+-5% 1/8W
R2704	0700054	CARBON FILM 10KOHM+-5% 1/8W
R2706	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R2707	0700039	CARBON FILM 820 OHM+-5% 1/8W
R2708	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R2709	0700027	CARBON FILM 100 OHM+-5% 1/8W
R2710	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R2711	0700032	CARBON FILM 220 OHM+-5% 1/8W
R2712	0700041	CARBON FILM 1.0KOHM+-5% 1/8W
R2713	0700029	CARBON FILM 150 OHM+-5% 1/8W
R2714	0700043	CARBON FILM 1.5KOHM+-5% 1/8W
R2715	0700044	CARBON FILM 1.8KOHM+-5% 1/8W
R2723	0700033	CARBON FILM 270 OHM+-5% 1/8W
R2730	0700033	CARBON FILM 270 OHM+-5% 1/8W
R2901	0103855	CHIP RESISTOR 10KOHM+-5% 0.1W
R2903	0103853	CHIP RESISTOR 6.8KOHM+-5% 0.1W

SYMBOL NO	P-NO	DESCRIPTION
R2904	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2905	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2906	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2907	0103843	CHIP RESISTOR 1KOHM+-5% 0.1W
R2908	0103877	CHIP RESISTOR 680KOHM+-5% 0.1W
R2909	AQ10961R	CHIP RESISTOR 22MOHM+-5% 0.125W(HEPM)
R2910	0103863	CHIP RESISTOR 47KOHM+-5% 0.1W
		SEMI-CONDUCTORS
D0401	5339071	DIODE 1SS119
⚠D0851	5336552	DIODE S1WBA60
D0852	CH10191M	DIODE EG01C-T
D0853	CH10921M	DIODE PR1003L
D0855	CH10921M	DIODE PR1003L
D0856	5339071	DIODE 1SS119
D0871	CH10921M	DIODE PR1003L
D0872	CH10771S	DIODE RN3Z
D0873	1331361	DIODE RK34
D0874	5339241	DIODE EK14
D0876	CH11171M	DIODE AK04
D0877	CH11171M	DIODE AK04
D0907	5339071	DIODE 1SS119
D0912	CH10871M	DIODE 1N4001
D0913	CH10871M	DIODE 1N4001
D0914	5339071	DIODE 1SS119
D0921	5339071	DIODE 1SS119
D0922	5339071	DIODE 1SS119
D1103	5339071	DIODE 1SS119
D1403	5339071	DIODE 1SS119
D1701	5339071	DIODE 1SS119
D1702	CH11171M	DIODE AK04
D2505	5339071	DIODE 1SS119
D2506	5339071	DIODE 1SS119
IC0201	CK22531	IC JCP8017NVA(HEPM)
IC0501	CK22541	IC AN3662FBP(HEPM)
IC0851	CP12462F	IC F6632(HEPM)
IC0871	CP11961R	IC HA17431PA
IC0901	CK21225	IC HD6433977SC33F(HEPM)
IC0902	CK06096R	IC PST9130NR(HEPM)
IC0903	CK13022	IC S-24C02A(HEPM)
IC0904	CP10291	IC BA6209
IC0905	CP11361R	IC M5278L05
IC0907	CK06092R	IC PST9145NR(HEPM)
IC1701	CZ10182	IC BU9716AK (HEPM)
IC2101	CJ10391	SENSOR SG-HT10(T)
IC2102	CJ10401	SENSOR SG-HT11(S)
IC2901	CP12631	IC Z86131(HEPM)
Q0213	CA11262R	TRANSISTOR DTC144EKA
Q0223	CA11262R	TRANSISTOR DTC144EKA
Q0403	5328975	TRANSISTOR 2SC2412K
Q0405	CA11272R	TRANSISTOR 2SA1037K-R
Q0406	5323172	TRANSISTOR 2SC1214CD
Q0411	CA11272R	TRANSISTOR 2SA1037K-R
Q0412	5328975	TRANSISTOR 2SC2412K
Q0413	5328975	TRANSISTOR 2SC2412K
Q0853	1321341	TRANSISTOR 2SD1765
Q0873	5327063	TRANSISTOR 2SC1740S
Q0874	5327261	TRANSISTOR 2SB1326(Q)
Q0875	5328975	TRANSISTOR 2SC2412K
Q0879	5327021	TRANSISTOR 2SA844CD
Q0880	1321341	TRANSISTOR 2SD1765
Q0896	5327063	TRANSISTOR 2SC1740S
Q0901	5327261	TRANSISTOR 2SB1326(Q)
Q0902	CA11262R	TRANSISTOR DTC144EKA
Q0909	CA11262R	TRANSISTOR DTC144EKA
Q0913	CA11262R	TRANSISTOR DTC144EKA
Q0914	CA11262R	TRANSISTOR DTC144EKA
Q1401	5328975	TRANSISTOR 2SC2412K
Q1404	CA11272R	TRANSISTOR 2SA1037K-R
Q1409	5328975	TRANSISTOR 2SC2412K
Q1410	CA11272R	TRANSISTOR 2SA1037K-R
Q1411	5328975	TRANSISTOR 2SC2412K
Q1701	5327071	TRANSISTOR DTC124ES
Q1702	5327071	TRANSISTOR DTC124ES
Q2101	CF10372	TRANSISTOR PT493FL1
Q2102	CF10372	TRANSISTOR PT493FL1
Q2103	CA11262R	TRANSISTOR DTC144EKA
Q2104	CA11262R	TRANSISTOR DTC144EKA
Q2501	5328975	TRANSISTOR 2SC2412K
Q2502	5328975	TRANSISTOR 2SC2412K
Q2503	5328975	TRANSISTOR 2SC2412K
Q2509	5328975	TRANSISTOR 2SC2412K
Q2510	CA11262R	TRANSISTOR DTC144EKA
Q2511	CA11252R	TRANSISTOR DTA144EKA
Q2513	CA11272R	TRANSISTOR 2SA1037K-R
Q2518	5328975	TRANSISTOR 2SC2412K
Q2701	CF10851R	TRANSISTOR DTC124ESA(HEPM)
Q2702	CF10851R	TRANSISTOR DTC124ESA(HEPM)
Q2901	5328975	TRANSISTOR 2SC2412K
Q2902	CA11262R	TRANSISTOR DTC144EKA
ZD0871	5339268	DIODE HZS11B2
ZD0872	5339482	DIODE HZS15-2
ZD0896	5339281	DIODE HZS11-A2
ZD0901	5339275	DIODE HZS7-B2
ZD0903	5339297	DIODE HZS5C3
ZD0906	5339297	DIODE HZS5C3
ZD2501	5339288	DIODE HZS30-3
ZD2502	5339257	DIODE HZS4-B1
		TRANSFORMERS
T0401	BT10251	TRANSFORMER,POWER
⚠T0851	BT10511	TRANSFORMER,POWER(HEPM)
		COILS
L0201	5159142	CHOKE COIL 12UH
L0202	BH10468R	COIL 100UH
L0205	BH10468R	COIL 100UH
L0207	5159153	CHOKE COIL 82UH
L0208	BH10468R	COIL 100UH
L0209	5159156	COIL 150UH
L0210	5159146	CHOKE COIL 27UH
L0211	5159142	COIL 12UH
L0401	BH10468R	COIL 100UH
L0403	BH10468R	COIL 100UH
L0501	BH10468R	COIL 100UH
L0502	BH10468R	COIL 100UH
⚠L0851	BJ10251	FILTER,LC
L0871	BH10337R	COIL 10UH
L0872	BH00205R	COIL 22UH [6430A]
L0872	BH10339R	COIL 22UH [6410A]
L1101	BH10468R	COIL 100UH
L1102	BH10468R	COIL 100UH
L1402	5159143	COIL 15UH
L1403	5159134	COIL 3.3UH
L1801	BH10468R	COIL 100UH
L2502	BH10468R	COIL 100UH
L2508	BH10468R	COIL 100UH

SYMBOL NO	P-NO	DESCRIPTION
LCD1701	DB10341	FLOURESENT DISPLAY
LD1701	CH11141R	DIODE SEL6414E (HEPM)
LD1702	CH11141R	DIODE SEL6414E (HEPM)
LD1703	CH11141R	DIODE SEL6414E (HEPM)
LD1704	CH11141R	DIODE SEL6414E (HEPM)
LD2101	CH10542	DIODE GL451L1
LD2702	CH10471R	DIODE SEL6210S
LD2703	CH11231R	DIODE SEL5220STH8F
LMP1701	DP10223	LIGHT,BACK (HEPM)
LMP1702	DP10223	LIGHT,BACK (HEPM)
LMP1703	DP10223	LIGHT,BACK (HEPM)
		CRYSTALS
X0201	BP10532	CRYSTAL (HEPM)
X0901	BP10571	CRYSTAL
X0902	BP10251	CRYSTAL
X2901	BP10251	CRYSTAL
		MISCELLANEOUS
BL0851	5272379	COIL
BL0852	5272379	COIL
BL0853	5272379	COIL
BL0871	5272379	COIL
BL0872	5272379	COIL
BL0901	5274522	CORE
BL2501	5272379	COIL
BL2901	5272379	COIL
⚠F0851	FN10201	FUSE 003A
FE2501	HC10371	RF/TUNER UNIT
FH0851	5722413	HOLDER,FUSE (HEPM)
FH0852	5722413	HOLDER,FUSE (HEPM)
IR1701	CJ10411	IC TSOP1738SB1
JK2501	EQ10161	JACK (FJK)
JK2501	ES10343	JACK (MAS)
JK2503	ES10372	JACK
⚠PC0851	1322421	PHOTOCOUPLER PC817A
⚠QF0871	FN10213R	FUSE 1.5A
⚠QF0872	FN10211R	FUSE 630mA
S0701	FE10432	SWITCH(HEPM)
S0702	FE10432	SWITCH(HEPM)
S0703	FE10432	SWITCH(HEPM)
S0704	FE10432	SWITCH(HEPM)
S0705	FE10432	SWITCH(HEPM)
S0706	FE10432	SWITCH(HEPM)
S0707	FE10432	SWITCH(HEPM)
S0709	5636101	SWITCH
S1701	FE10431	SWITCH
S2101	FD10211	SWITCH,MODE
S2102	5635631	SWITCH
S2103	5635631	SWITCH
S2501	FE10431	SWITCH(HEPM)
S2502	FE10431	SWITCH(HEPM)
S2505	FE10431	SWITCH(HEPM)
S2508	FE10431	SWITCH(HEPM)
S2701	FE10431	SWITCH(HEPM)
S2704	FE10431	SWITCH(HEPM)
S2706	FE10431	SWITCH(HEPM)
S2708	FE10431	SWITCH(HEPM)
S2709	FE10431	SWITCH(HEPM)
S2721	FH10271	SWITCH

MEMO

CHAPTER 6 SCHEMATIC, CIRCUIT BOARD AND BLOCK DIAGRAMS/ MICROPROCESSOR PIN FUNCTION TABLE

Cautions when using schematic diagrams

Caution for safety
The parts marked ⚠ are critical for safety. Be sure to use the specified parts to ensure safety when replacing them.

1. Values in schematic diagrams
The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ····· ohm K ····· k ohm M ····· M ohm
Tolerance	No indication ····· ±5% (All tolerances other than ±5% are indicated in the schematic diagrams)
Power capacitance	No indication ····· 1/8W (1/16W for leadless resistors without indication) All capacitances other than the above are indicated in the schematic diagrams.

[Capacitors]

Item	Indication
Value	No indication ····· µF P ····· pF
Dielectric strength	No indication ····· 50V (All dielectric strengths other than 50V are indicated in the schematic diagrams.)

[Coils]

Item	Indication
Value	µ ····· µH m ····· mH

Cautions when using circuit board diagrams

1. Identifications of sides A/B in circuit board diagrams
   1) Board having a pattern on one side and parts on both sides.
      Side A: Shows discrete parts, viewed from the pattern side.
      Side B: Shows leadless parts, viewed from the pattern side.
   2) Board having patterns on both sides and parts on both sides.
      Side A: Shows parts and patterns which can be seen when the case is opened.
      Side B: Shows parts and the pattern on the back of side A.

2. Table for indexing locations of parts
This table shows locations of each part on the circuit board diagrams. The locations are indicated using the guide scales on the external lines of diagrams.

1) In case of one-layer board

Symbol No.	Part Location
IC	
IC2101	2 A

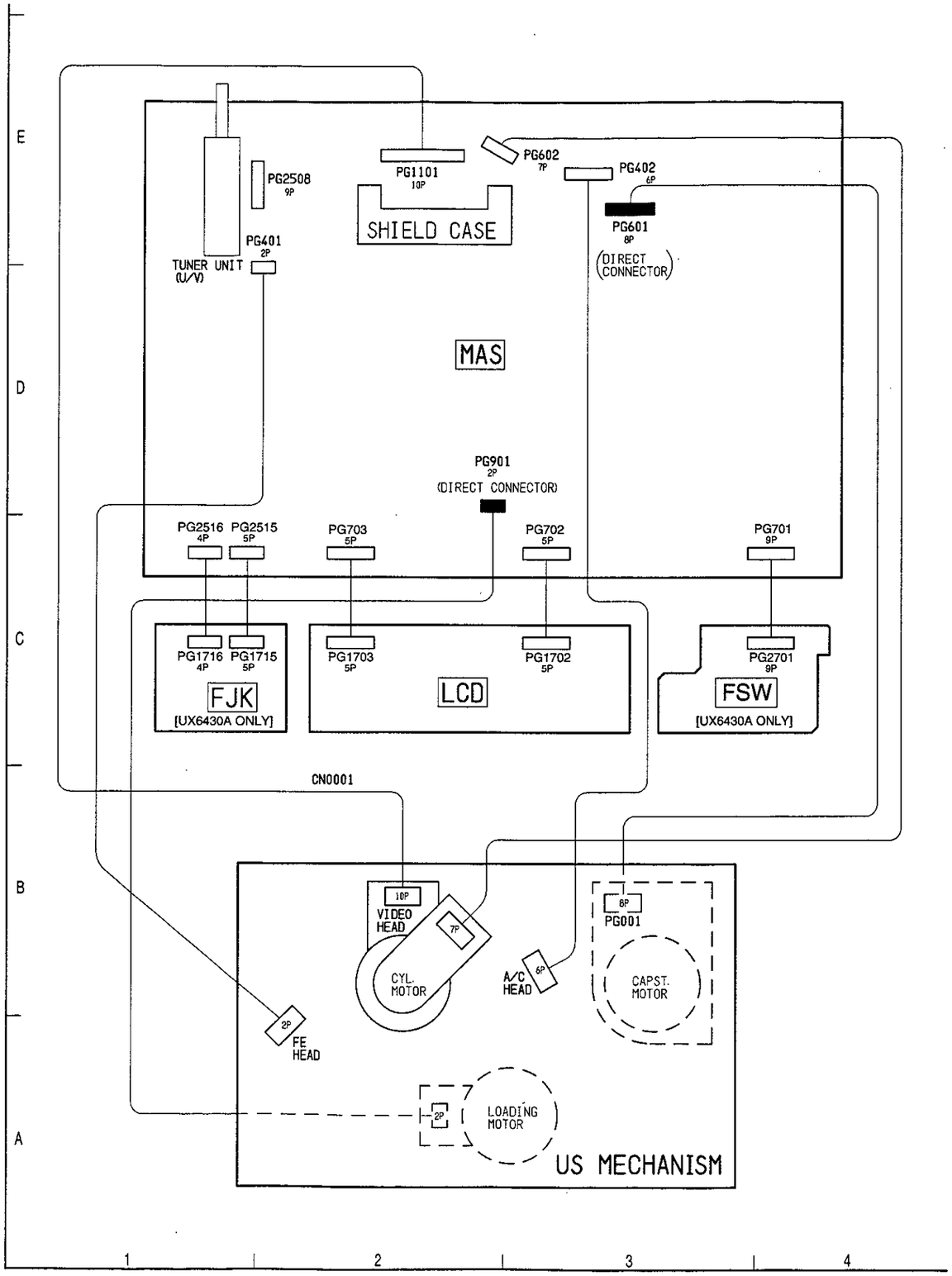
Sort of parts
Zone "A" on board diagram
Zone "2" on board diagram
Circuit No.

2) In case of side A/B indication board

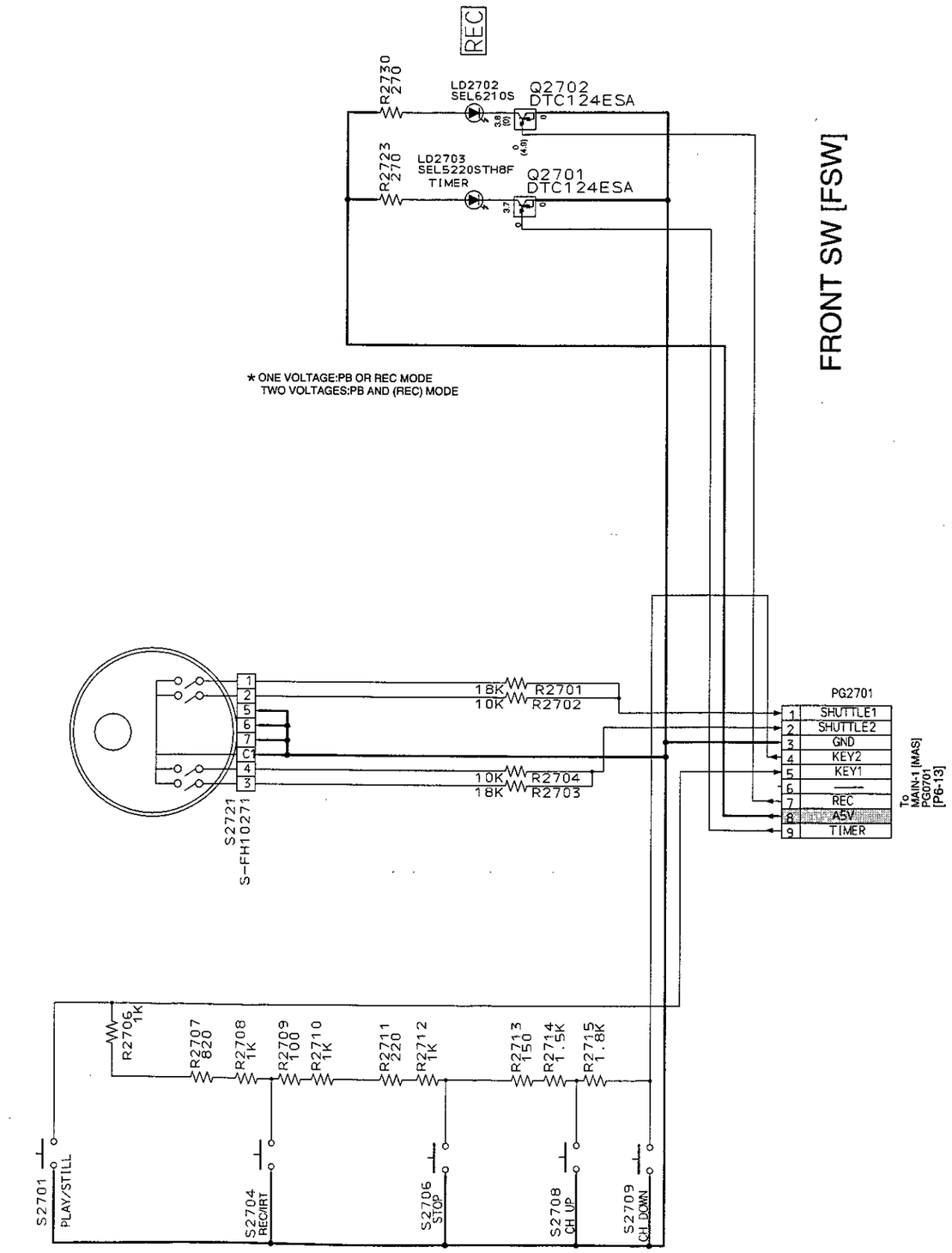
Symbol No.	Part Location
Q	
Q1201	A - 2 A

Sort of parts
Zone "A" on board diagram
Zone "2" on board diagram
Circuit No.
A: Shows side A
B: Shows side B

CONNECTION DIAGRAM

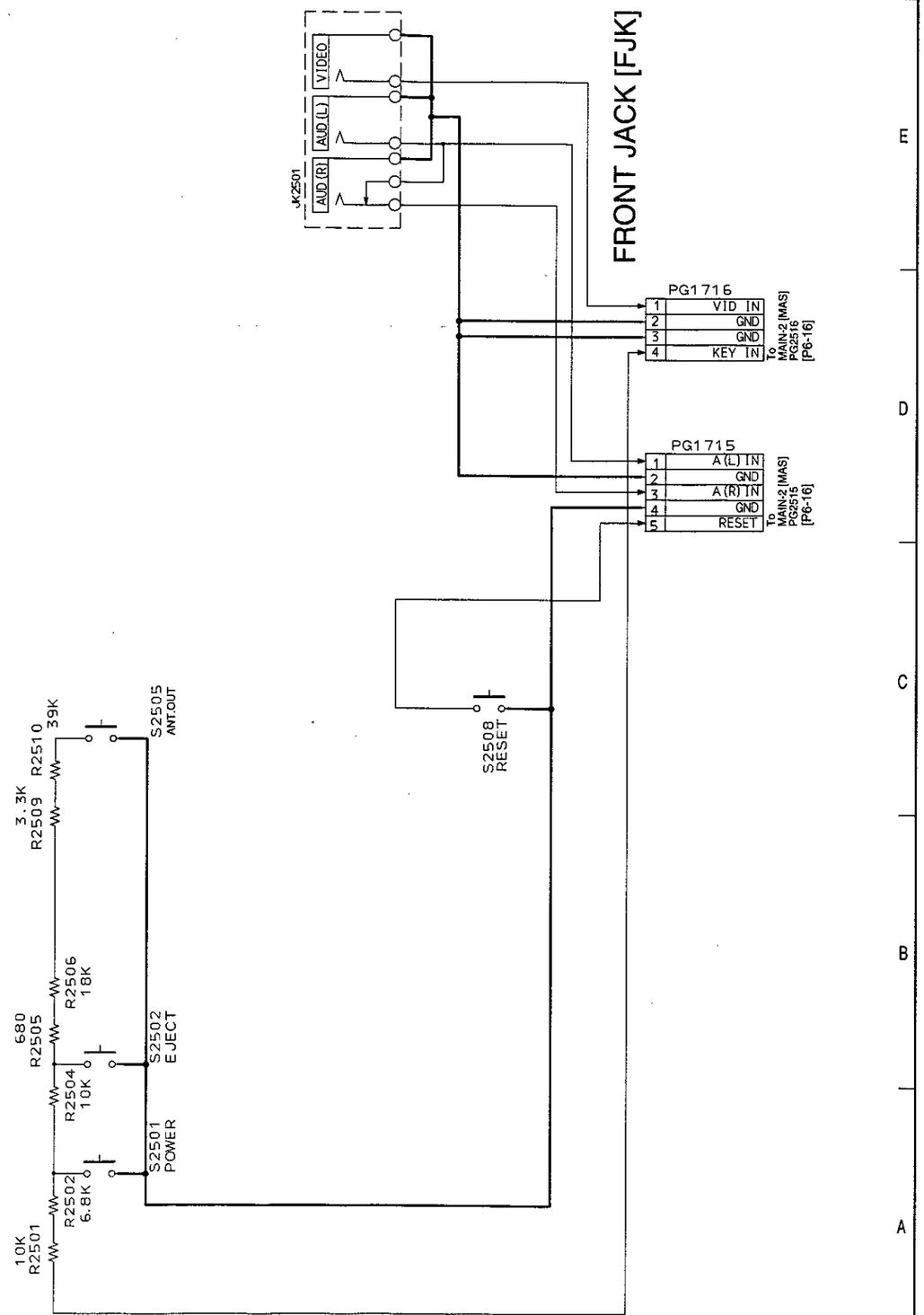


FRONT SW [FSW] SCHEMATIC DIAGRAM

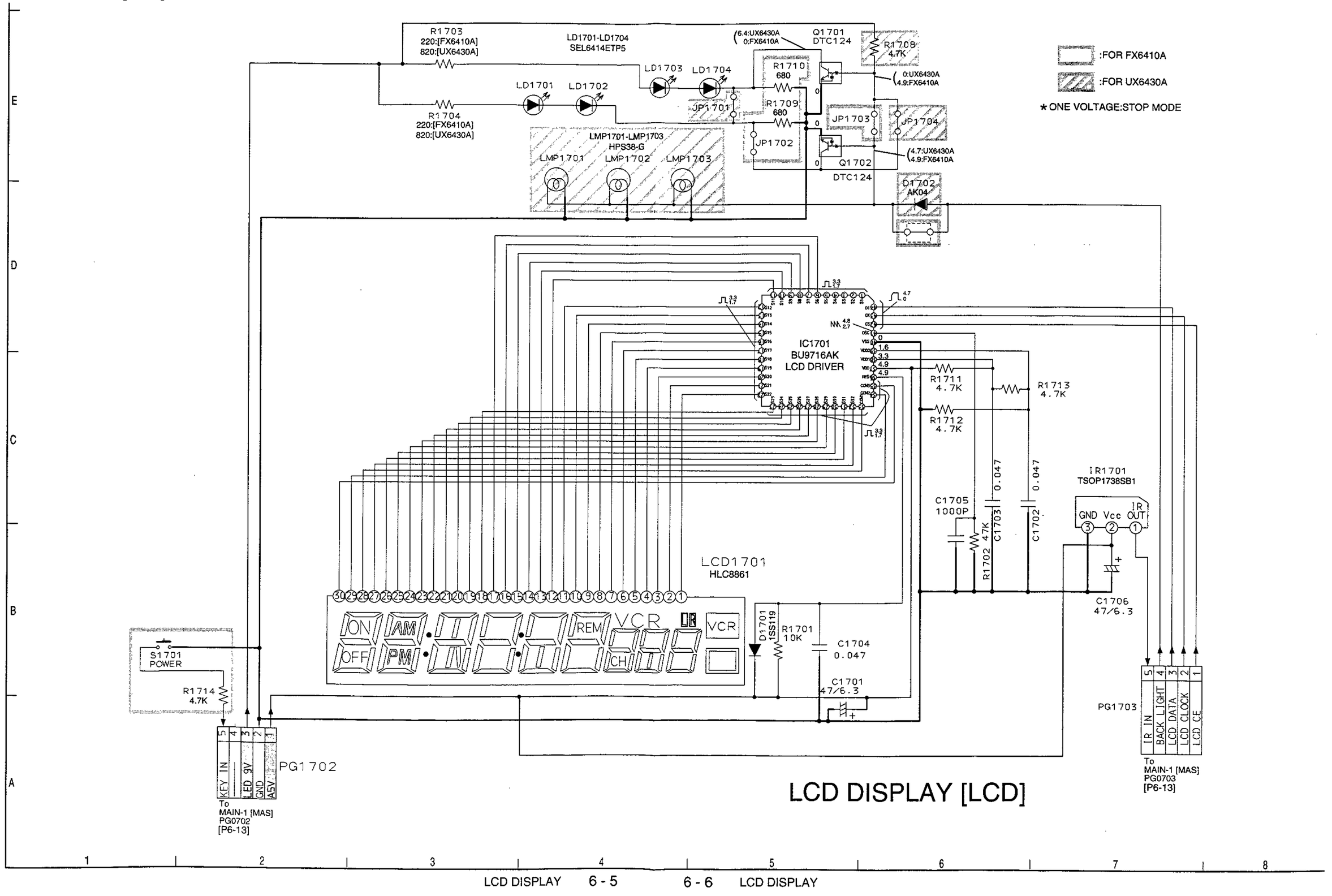


FRONT SW [FSW]

FRONT JACK [FJK] SCHEMATIC DIAGRAM

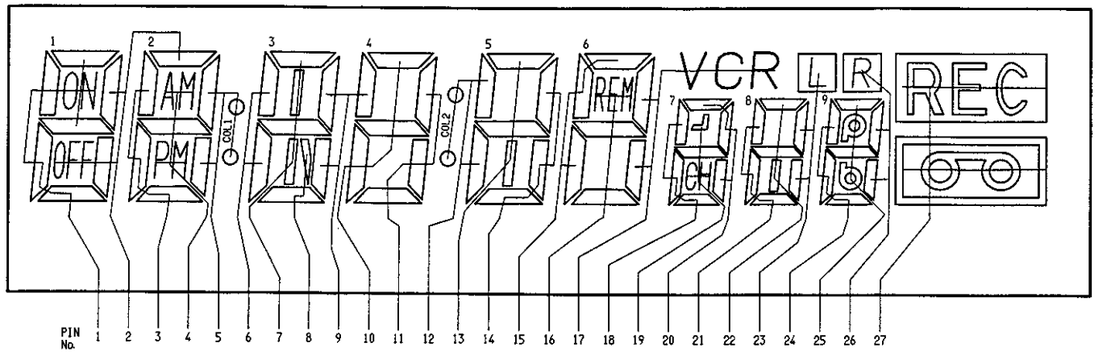


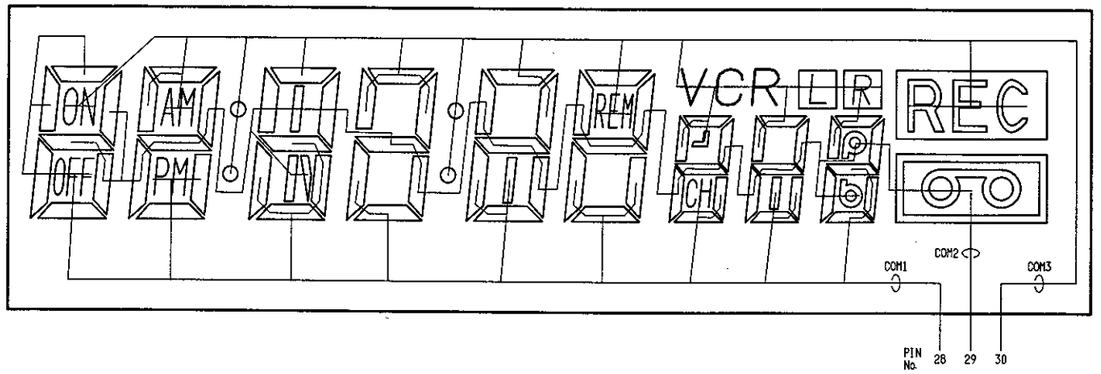
LCD DISPLAY [LCD] SCHEMATIC DIAGRAM



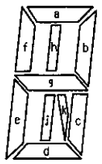
LCD DISPLAY [LCD]

LCD GRID TABLE

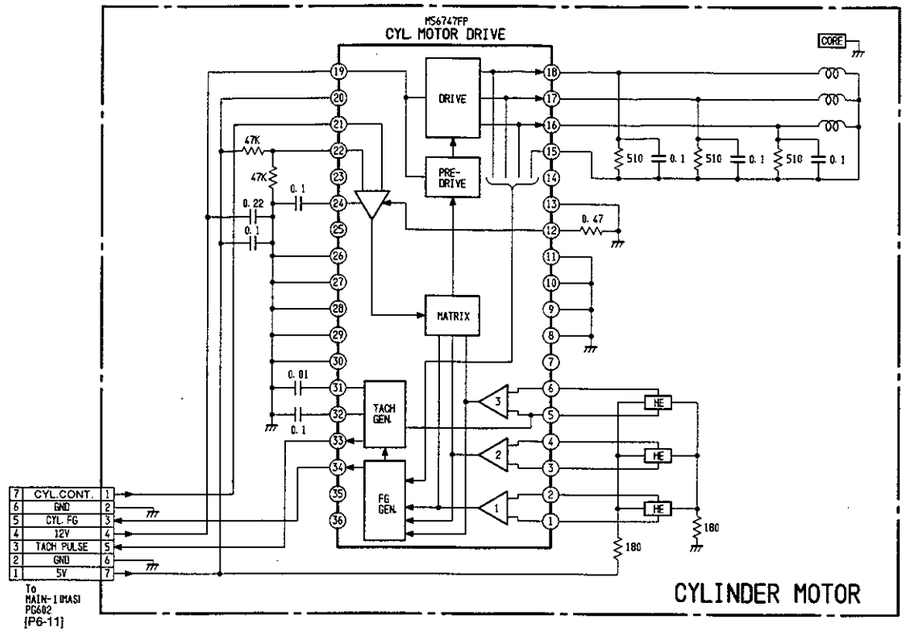




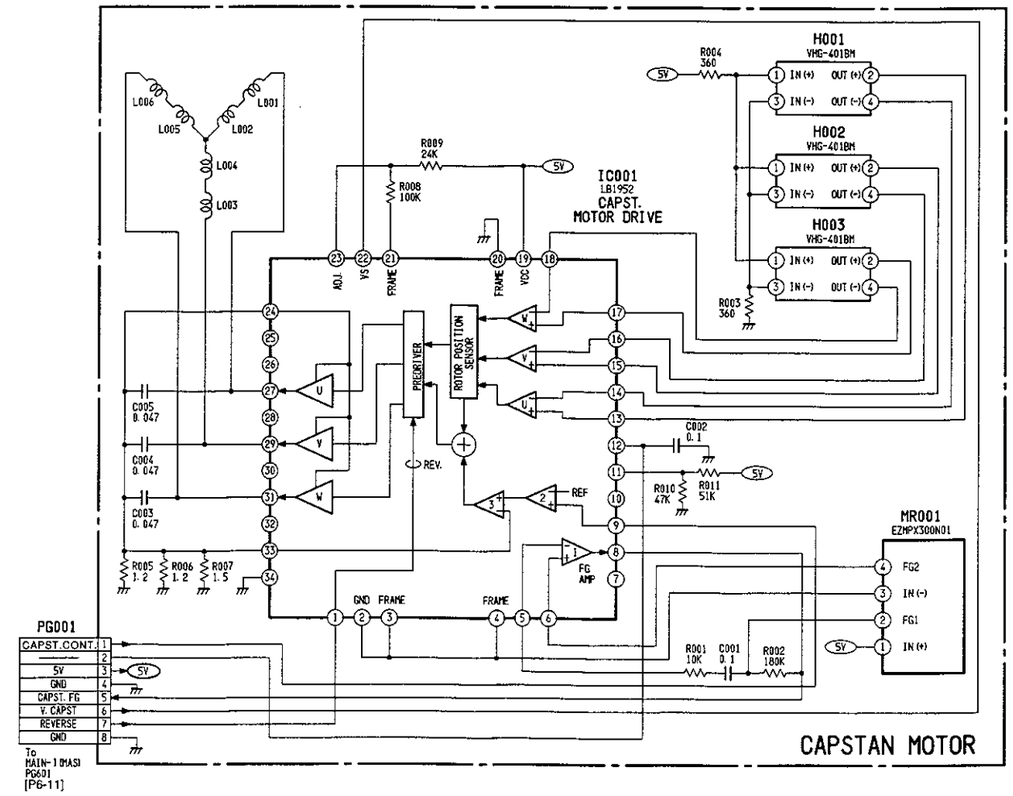
PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
COM1	1adef	OFF	2d	PM	2c	3e	3g	3d	3c	4e	4d	5e	5j	5d	6e	6d	6c	7d	CH	7c	8d	8j	8c	9d	9g	9c	—	COM	—	—
COM2	1g	1bc	2e	2g	2b	3f	3hj	3k	3b	4g	4c	5f	5g	5c	6f	6g	6b	7e	7g	7b	8e	8g	8b	9e	9b	[ ]	—	COM	—	—
COM3	ON	2a	2f	AM	COL1	—	3a	—	4f	4a	4b	COL2	5a	5b	6a	REM	VCR	7f	[ ]	7a	8f	8a	L	9f	9a	R	REC	—	—	COM



CYLINDER MOTOR SCHEMATIC DIAGRAM

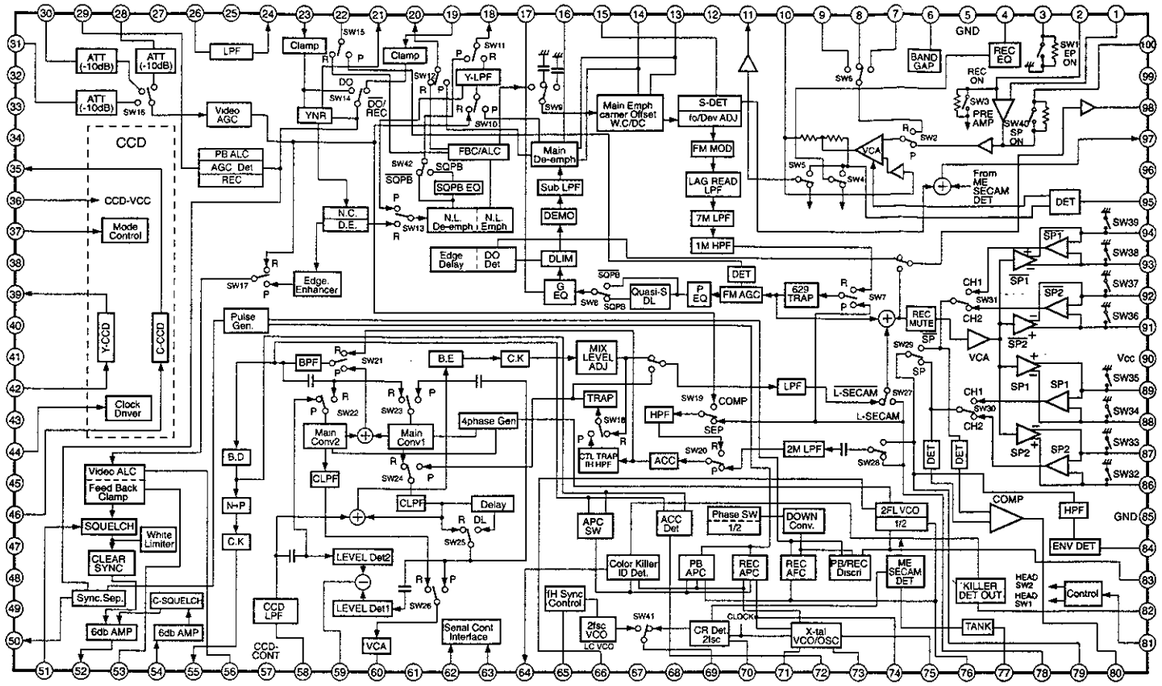


CAPSTAN MOTOR SCHEMATIC DIAGRAM

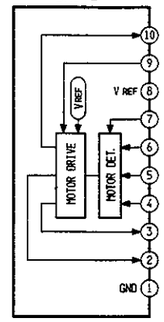


IC BLOCK DIAGRAM

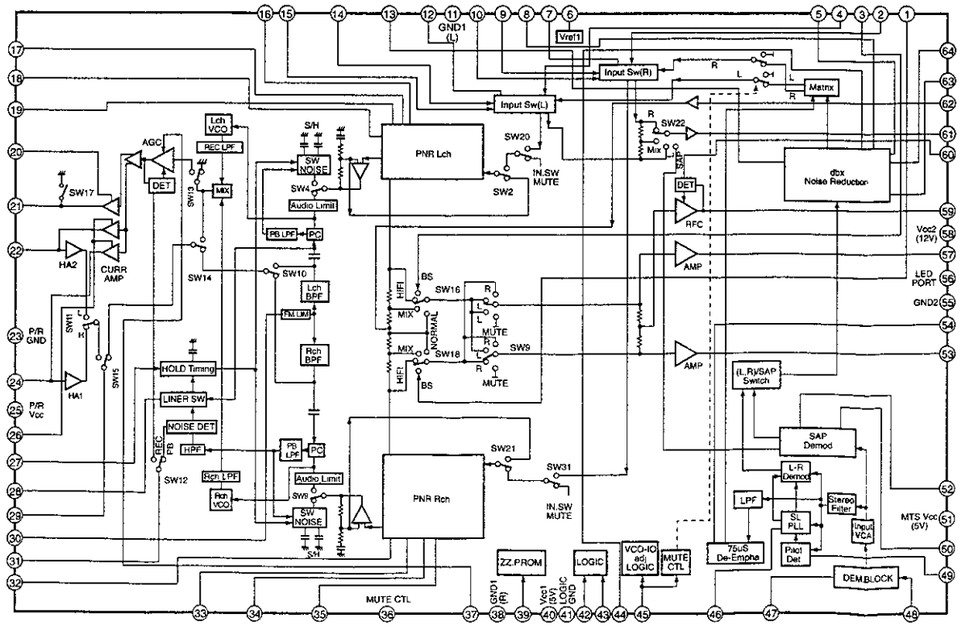
IC0201
JCP8017NVA
VIDEO/LINEAR AUDIO
PROCESS



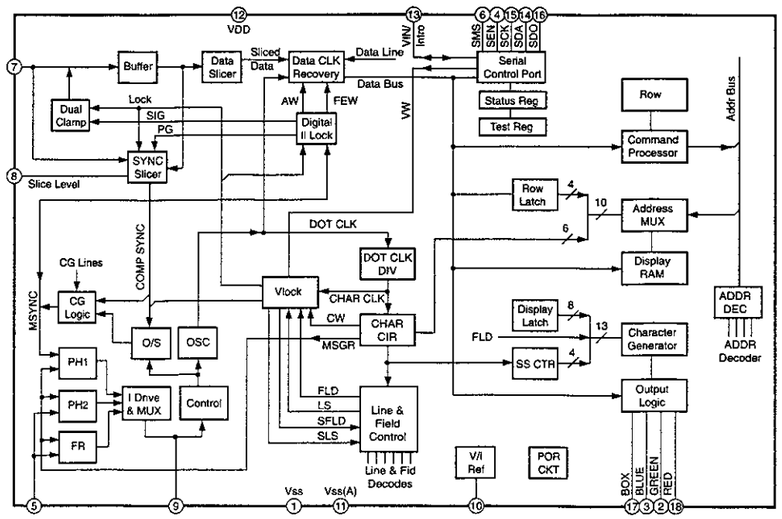
IC0904
BA6209
TAPE LOADING
DRIVE



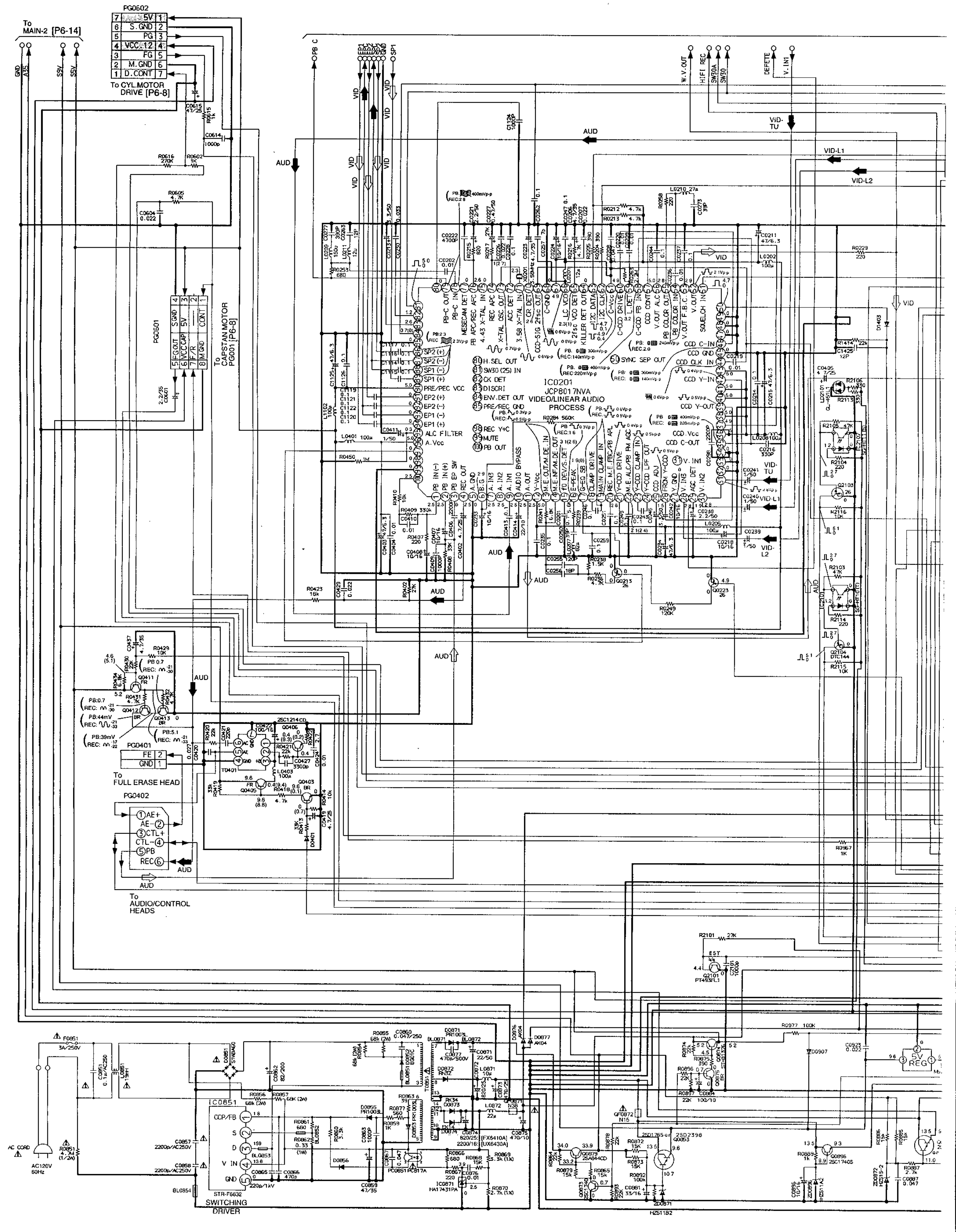
IC0501
AN3662FBP
AUDIO PROCESS/MPX DECODER



IC2901
Z86131
AUTO CLOCK

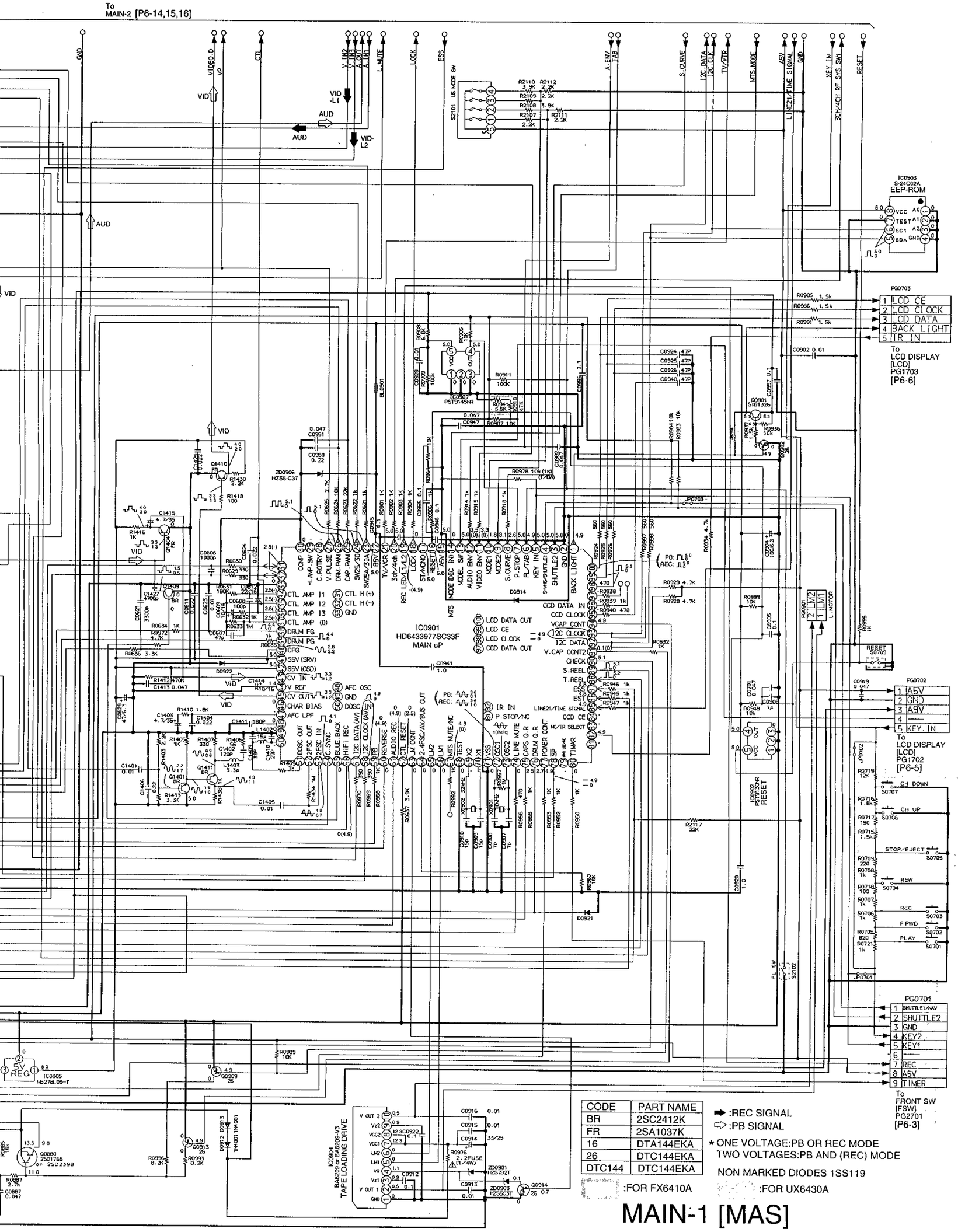


MAIN-1 [MAS] SCHEMATIC DIAGRAM



To MAIN-2 [P6-14]
GND
A35
S9V
S5V
PG0602
To CYL.MOTOR DRIVE [P6-8]
PG0601
To CAPSTAN MOTOR PG001 [P6-8]
PB C
SP1
W.V.OUT
HIFI REC
SW30A
SW30
DEFETE
V.IN1
IC0201
JCP8017NVA
VIDEO/LINEAR AUDIO PROCESS
PG0401
To FULL ERASE HEAD
PG0402
To AUDIO/CONTROL HEADS
IC0851
STR-F6632
SWITCHING DRIVER
AC CORD
AC120V 60Hz
5V REG

To
MAIN-2 [P6-14,15,16]



CODE	PART NAME
BR	2SC2412K
FR	2SA1037K
16	DTA144EKA
26	DTC144EKA
DTC144	DTC144EKA

:FOR FX6410A

➡ :REC SIGNAL
⇨ :PB SIGNAL

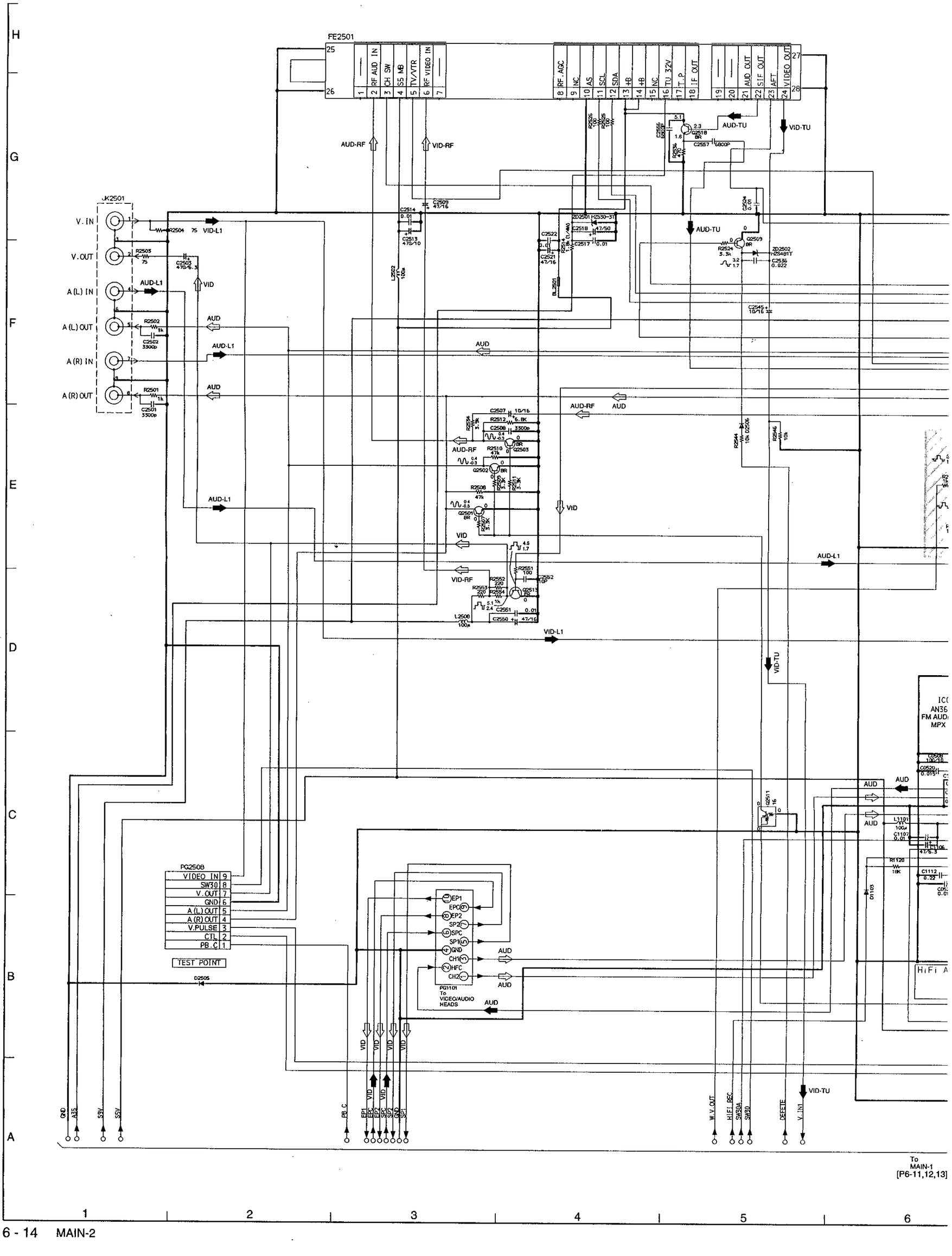
* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

NON MARKED DIODES 1SS119

:FOR UX6430A

MAIN-1 [MAS]

MAIN-2 [MAS] SCHEMATIC DIAGRAM



:FOR FX6410A

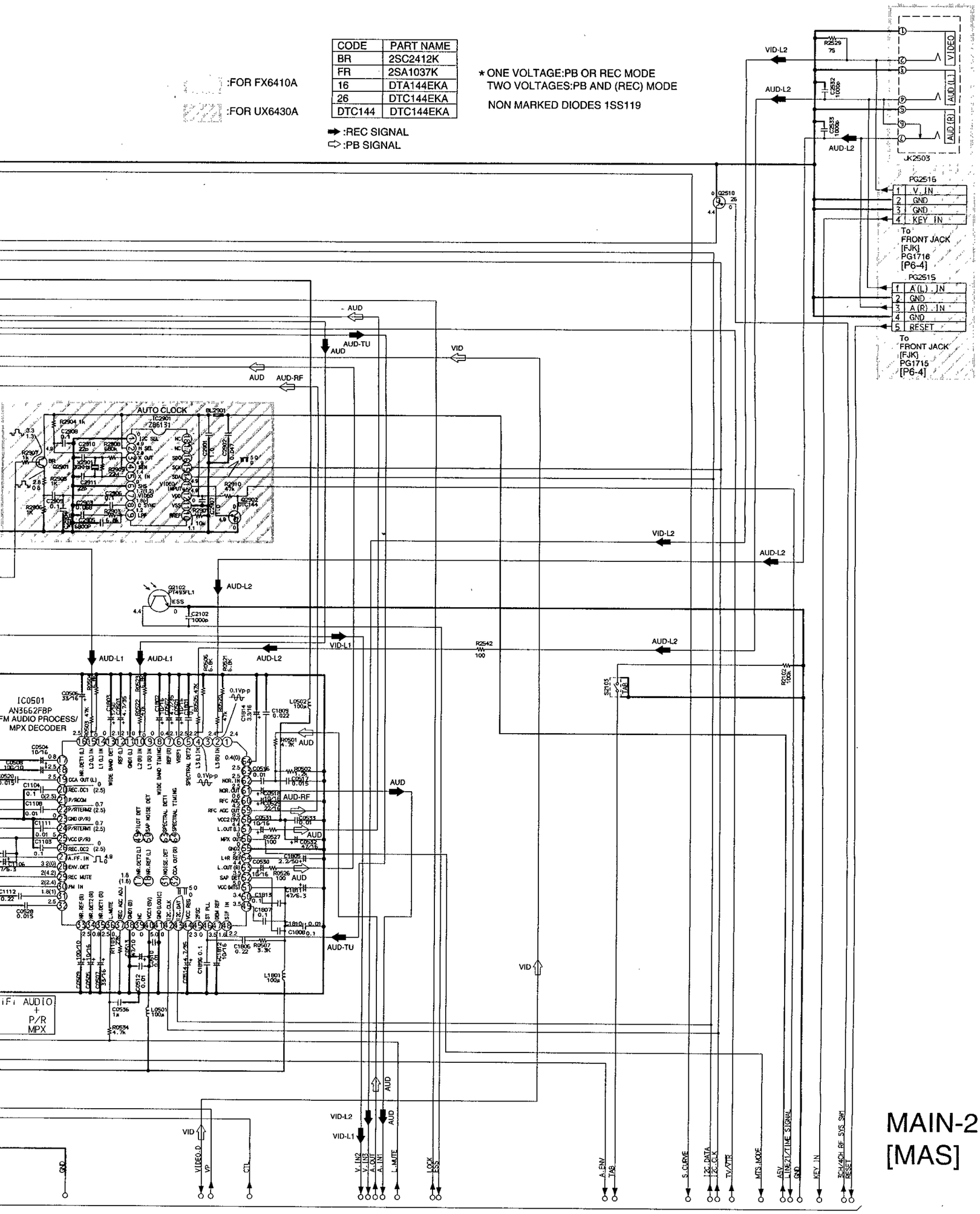
:FOR UX6430A

CODE	PART NAME
BR	2SC2412K
FR	2SA1037K
16	DTA144EKA
26	DTC144EKA
DTC144	DTC144EKA

➡ :REC SIGNAL
⇨ :PB SIGNAL

* ONE VOLTAGE:PB OR REC MODE
TWO VOLTAGES:PB AND (REC) MODE

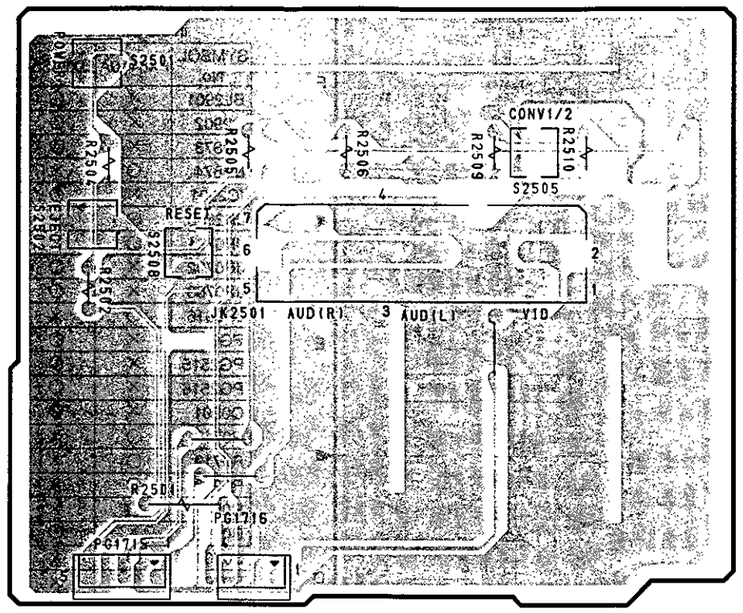
NON MARKED DIODES 1SS119



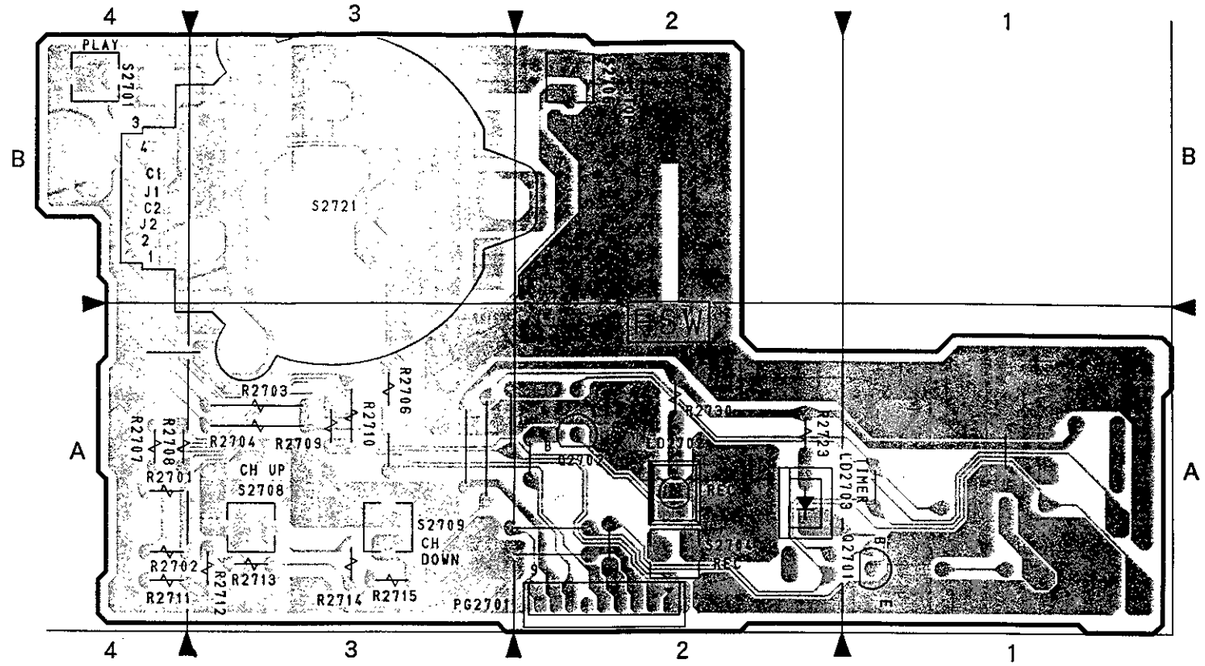
MAIN-2 [MAS]

N-1
,12,13]

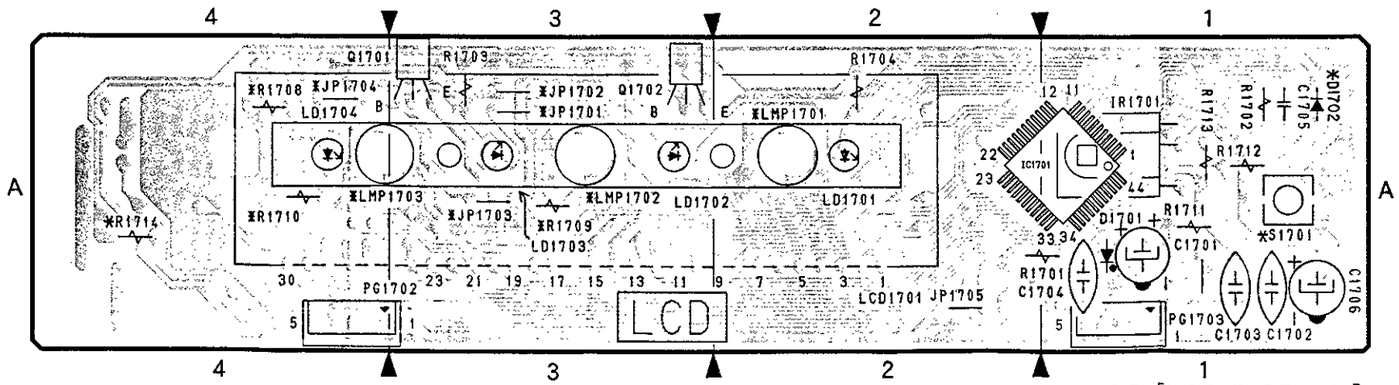
7 8 9 10 11 12



FJK [FRONT JACK]
[PATTERN No. JK1423-2]
[For VT-UX6430A]



FSW [FRONT SW]
[PATTERN No. JK1423-2]
[For VT-UX6430A]



LCD [LCD DISPLAY]
[PATTERN No. JK1361-2]

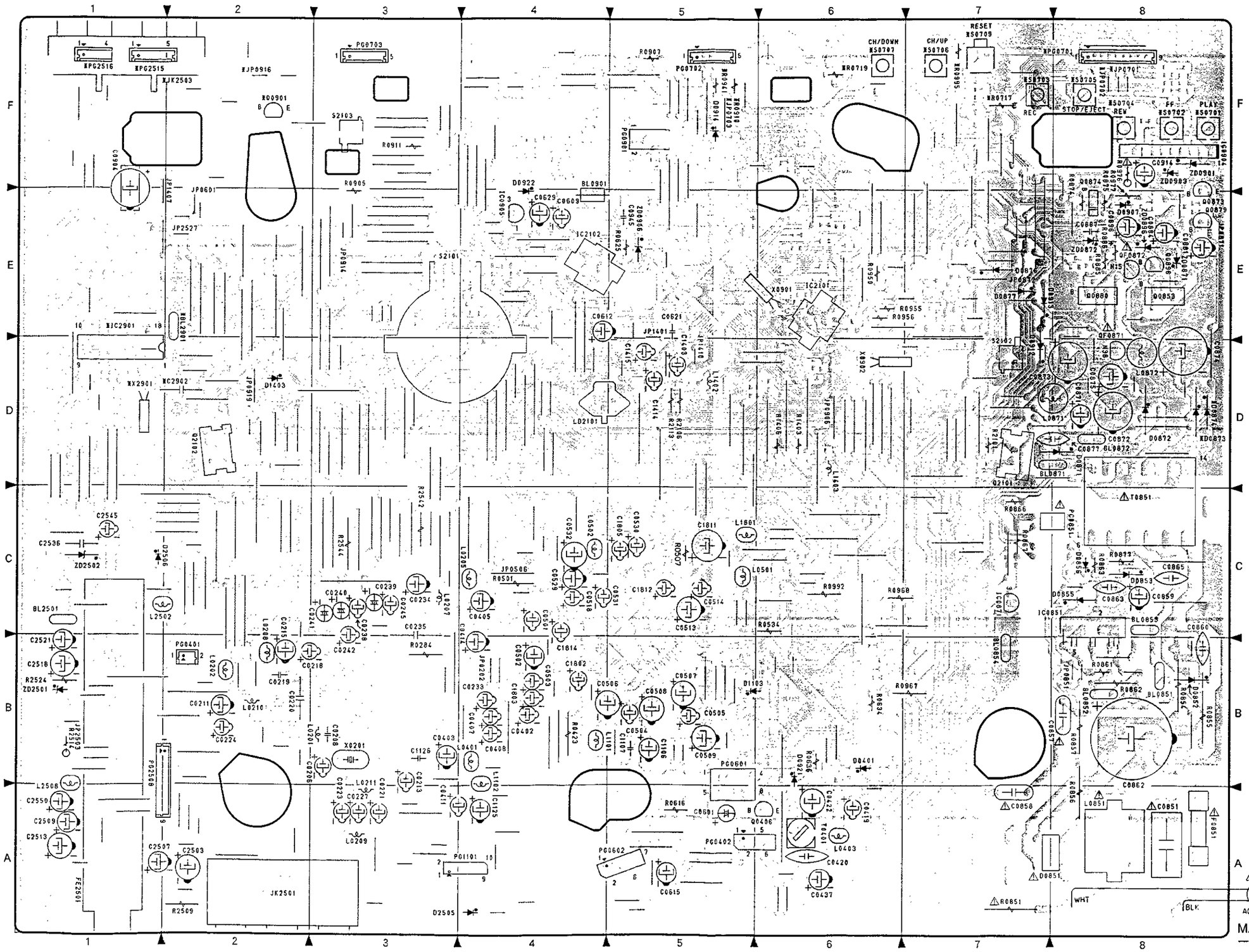
DIFFERENCE TABLE

LCD

NOTE: This table listes the different components marked with asterisks (*) in the circuit board

SYMBOL No.	FX6410A	UX6430A
D1702	JUMPER	○
JP1701	×	○
JP1702	○	×
JP1703	○	×
JP1704	×	○
LMP1701	×	○
LMP1702	×	○
LMP1703	×	○
R1708	×	○
R1709	○	×
R1710	○	×
R1714	○	×
S1701	○	×

MAS CIRCUIT BOARD – SIDE A – [PATTERN No. JK1420-15]



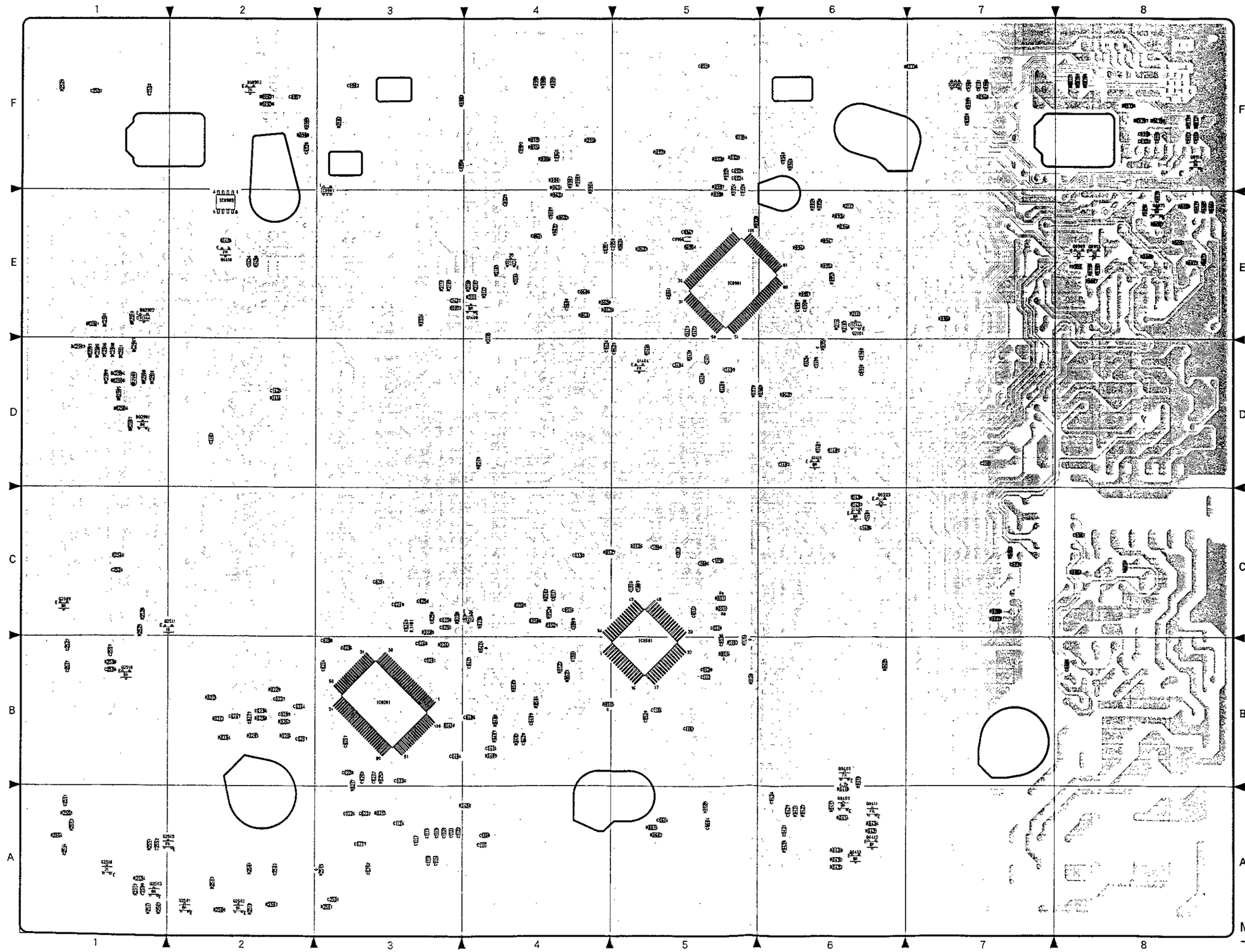
DIFFERENCE TABLE

MAS -SIDE A-

NOTE: This table listes the different components marked with asterisks (*) in the circuit board

SYMBOL No.	FX6410A	UX6430A
BL2901	×	○
C2902	×	○
D0873	×	○
D0874	○	×
IC2901	×	○
JK2503	○	×
JP0701	○	×
JP0702	×	○
JP0703	×	○
JP0916	○	×
PG0701	×	○
PG2515	×	○
PG2516	×	○
Q0901	×	○
R0717	○	×
R0719	○	×
R0910	○	×
R0941	○	×
R0995	×	○
S0701	○	×
S0702	○	×
S0703	○	×
S0704	○	×
S0705	○	×
S0706	○	×
S0707	○	×
S0709	○	×
X2901	×	○

MAS CIRCUIT BOARD – SIDE B – [PATTERN No. JK1420-5]



MAS [MAIN]
—SIDE B—

DIFFERENCE TABLE

MAS -SIDE B-

NOTE: This table listes the different components marked with asterisks (*) in the circuit board

SYMBOL No.	FX6410A	UX6430A
C2901	×	○
C2903	×	○
C2904	×	○
C2905	×	○
C2906	×	○
C2907	×	○
C2908	×	○
C2909	×	○
C2910	×	○
C2911	×	○
Q0902	×	○
Q2901	×	○
Q2902	×	○
R0705	○	×
R0706	○	×
R0707	○	×
R0708	○	×
R0709	○	×
R0715	○	×
R0716	○	×
R0718	○	×
R0721	○	×
R0936	×	○
R0937	×	○
R2901	×	○
R2903	×	○
R2904	×	○
R2905	×	○
R2906	×	○
R2907	×	○
R2908	×	○
R2909	×	○
R2910	×	○

IDENTIFICATIONS OF PART LOCATION

FSW

Symbol No.	Parts Location
LD	
LD2702	2A
LD2703	2A
PG	
PG2701	2A
Q	
Q2701	1A
Q2702	2A
R	
R2701	4A
R2702	4A
R2703	3A
R2704	3A
R2706	3A
R2707	4A
R2708	4A
R2709	3A
R2710	3A
R2711	4A
R2712	3A
R2713	3A
R2714	3A
R2715	3A
R2723	2A
R2730	2A
S	
S2701	4B
S2704	2A
S2706	2B
S2708	3A
S2709	3A
S2721	3B

LCD

Symbol No.	Parts Location
C	
C1701	1A
C1702	1A
C1703	1A
C1704	1A
C1705	1A
C1706	1A
D	
D1701	1A
D1702	1A
IC	
IC1701	1A
IR	
IR1701	1A
JP	
JP1701	3A
JP1702	3A
JP1703	3A
JP1704	4A
LCD	
LCD1701	2A
LD	
LD1701	2A
LD1702	3A
LD1703	3A
LD1704	4A
LMP	
LMP1701	2A
LMP1702	3A
LMP1703	4A
PG	
PG1702	4A
PG1703	1A
Q	
Q1701	3A
Q1702	3A
R	
R1701	1A
R1702	1A
R1703	3A
R1704	2A
R1708	4A
R1709	3A
R1710	4A
R1711	1A
R1712	1A
R1713	1A
R1714	4A
S	
S1701	1A

MAS

Symbol No.	Parts Location
BL	
BL0851	A-8B
BL0852	A-8B
BL0853	A-8C
BL0854	A-7B
BL0871	A-8D
BL0872	A-8D
BL0901	A-4E
BL2501	A-1C
BL2901	A-2E
C	
C0201	B-3B
C0202	B-3B
C0206	A-3B
C0207	B-2B
C0208	A-3B
C0209	B-2B
C0211	A-2B
C0213	A-3B
C0214	B-3B
C0215	A-2B
C0216	B-3B
C0218	A-3B
C0219	A-2B
C0220	A-2B
C0221	A-3A
C0222	B-3A
C0223	A-3A
C0224	A-2B
C0226	B-3A
C0227	A-3A
C0228	B-3B
C0230	B-3B
C0233	A-4B
C0234	A-3C
C0235	A-3C
C0236	B-2B
C0237	B-2B
C0238	A-3C
C0239	A-3C
C0240	A-3C
C0241	A-3C
C0242	A-3C
C0243	B-3C
C0244	B-2B
C0245	A-3C
C0246	B-3B
C0247	B-2B
C0249	B-3C
C0250	B-3C
C0251	B-3C
C0255	B-3C
C0256	B-3C
C0257	B-3B
C0257	B-3B
C0259	B-3C
C0262	B-3A
C0263	B-3B
C0273	B-2B
C0277	B-3A
C0298	B-3B
C0402	A-4B
C0403	A-3B
C0404	B-3B
C0405	A-4C
C0406	B-4B
C0407	A-4B
C0408	A-4B
C0409	B-4B
C0410	B-4B
C0411	A-4A
C0413	B-4B
C0414	A-4B
C0419	A-6A
C0420	A-6A
C0421	B-6A
C0422	A-6A
C0424	B-6A
C0427	B-6A
C0429	B-4B
C0437	A-6A
C0501	A-4C
C0502	A-4B
C0503	A-4B
C0504	A-5B
C0505	A-5B
C0506	A-5B
C0507	A-5B
C0508	A-5B
C0509	A-5B
C0510	B-5C
C0512	B-5C
C0513	A-5C
C0514	A-5C
C0516	B-4C
C0517	B-4C
C0518	A-4C
C0520	B-5B
C0528	B-5B
C0529	A-4C
C0530	A-5C
C0531	A-4C
C0532	A-4C
C0533	B-4C
C0536	B-5B
C0601	A-5A
C0604	B-5A
C0606	B-4E
C0607	B-4E
C0608	B-4E
C0609	A-4E
C0611	B-4E
C0612	A-4E
C0614	B-5A
C0615	A-5A
C0621	A-5E
C0623	B-5D
C0624	B-4D
C0629	A-4E
C0701	B-7F
C0851	A-8A
C0857	A-8B
C0858	A-7A
C0859	A-8C
C0860	A-8B
C0862	A-8B
C0863	A-8C
C0865	A-8C
C0866	B-8B
C0867	B-8C
C0871	A-8D
C0872	A-8D
C0873	A-8D
C0874	A-8D
C0875	A-8D
C0876	B-7C
C0877	A-8D
C0881	A-8E
C0884	A-8E
C0887	A-8E
C0896	A-8E
C0902	B-3F
C0904	A-1F
C0905	B-7F
C0906	B-7F
C0907	B-6E
C0908	B-6E
C0909	B-6D
C0910	B-6D
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C0913	B-8F
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C0926	B-5F
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C0947	B-5E
C0950	B-5E
C0951	B-4E
C0955	B-5E
C0956	B-3F
C0957	B-2F
C0982	B-4F
C1103	B-5B
C1104	B-5B
C1106	A-5B
C1107	A-5B
C1108	B-4A
C1111	B-4A
C1112	B-5B
C1114	B-3A
C1115	B-3A
C1116	B-3A
C1117	B-3A
C1119	B-3A
C1120	B-3A
C1121	B-3A
C1122	B-3A
C1124	B-3A
C1125	A-4A
C1126	A-3B
C1401	B-6C
C1402	B-6D
C1403	A-5D
C1404	B-5D
C1405	B-6D
C1406	B-6C
C1409	B-5D
C1410	B-5D
C1411	B-5D
C1413	B-5E
C1414	A-5D
C1415	A-5D
C1424	B-2E
C1425	B-2D
C1427	B-3E
C1801	B-4B
C1802	A-4B
C1803	A-4B
C1805	A-5C
C1806	B-5C
C1807	B-5C
C1808	B-5C
C1809	B-4C
C1810	B-5C
C1811	A-5C
C1812	A-5C
C1813	B-5C
C1814	A-4C
C1896	B-5C
C2101	B-7D
C2102	B-2D
C2501	B-3A
C2502	B-2A
C2503	A-2A
C2507	A-1A
C2508	B-1A
C2509	A-1A
C2513	A-1A
C2514	B-1A
C2517	B-1B
C2518	A-1B
C2521	A-1B
C2522	B-1B
C2524	B-1C
C2532	B-1F
C2533	B-1F
C2536	A-1C
C2545	A-1C
C2550	A-1A
C2551	B-1A
C2552	B-1A
C2556	B-1B
C2557	B-1B
C2901	B-1E
C2902	A-2D
C2903	B-1D
C2904	B-1D
C2905	B-1D
C2906	B-1D
C2907	B-1D
C2908	B-1D
C2909	B-1D
C2910	B-1D
C2911	B-1D
D	
D0401	A-6B
D0851	A-8A
D0852	A-8B
D0853	A-8C
D0855	A-8C
D0856	A-8C
D0871	A-8D
D0872	A-8D
D0873	A-8D
D0874	A-8D
D0876	A-7E
D0877	A-7E
D0907	A-8E
D0912	A-7D
D0913	A-7E
D0914	A-5F
D0921	A-6B
D0922	A-4E
D1103	A-5B
D1403	A-2D
D2505	A-4A
D2506	A-1C
F	
F0851	A-8A
FE	
FE2501	A-1A
IC	
IC0201	B-3B
IC0501	B-5B
IC0851	A-8C
IC0871	A-7C
IC0901	B-5E
IC0902	B-7F
IC0903	B-2E
IC0904	A-8F
IC0905	A-4E
IC0907	B-3E
IC2101	A-6E
IC2102	A-4E
IC2901	A-1D
JK	
JK2501	A-2A
JK2503	A-1F
JP	
JP0701	A-8F
JP0702	A-8F
JP0703	A-5F
JP0916	A-2F
L	
L0201	A-3B
L0202	A-2B
L0205	A-4C
L0207	A-3C
L0208	A-2B
L0209	A-3A
L0210	A-2B
L0211	A-3A
L0401	A-4B
L0403	A-6A
L0501	A-5C
L0502	A-4C
L0851	A-8A
L0871	A-8D
L0872	A-8D
L1101	A-4B
L1102	A-4B
L1402	A-5D
L1403	A-6D
L1801	A-5C
L2502	A-1C
L2508	A-1B
LD	
LD2101	A-4D
PC	
PC0851	A-8C
PG	
PG0401	A-2B
PG0402	A-6A
PG0601	A-5B
PG0602	A-5A
PG0701	A-8F
PG0702	A-5F
PG0703	A-3F
PG0901	A-5F
PG1101	A-4A
PG2508	A-1B
PG2515	A-1F
PG2516	A-1F
Q	
Q0213	B-4C
Q0223	B-6C
Q0403	B-6A
Q0405	B-6B
Q0406	A-6A
Q0411	B-6A
Q0412	B-6A
Q0413	B-6A
Q0853	A-8E
Q0873	A-8F
Q0874	A-8E
Q0875	B-8E
Q0879	A-8E
Q0880	A-8E
Q0896	A-8E
Q0901	A-2F
Q0902	B-2F
Q0909	B-8E
Q0913	B-8E
Q0914	B-8F
Q1401	B-6C
Q1404	B-5D
Q1409	B-4E
Q1410	B-2E
Q1411	B-6D
Q2101	A-7D
Q2102	A-2D
Q2103	B-4E
Q2104	B-6E
Q2501	B-2A
Q2502	B-2A
Q2503	B-1A
Q2509	B-1C
Q2510	B-1A
Q2511	B-2C
Q2513	B-2A
Q2518	B-1B
Q2901	B-1D
Q2902	B-1E
QF	
QF0871	A-8D
QF0872	A-8E
R	
R0204	B-2B
R0205	B-2B
R0212	B-2B
R0213	B-2B
R0215	B-3A
R0216	B-2B
R0217	B-3B
R0229	B-2B
R0236	B-4C
R0238	B-3C
R0239	B-3C
R0241	B-3B
R0249	B-4D
R0253	B-3B
R0258	B-2B
R0263	B-2B
R0284	A-3B
R0402	B-4B
R0405	B-6B
R0406	A-6A
R0407	B-4B
R0408	B-4B
R0409	B-4B
R0410	B-3B
R0413	B-6A
R0414	B-6A
R0418	B-6A
R0419	B-6B
R0420	B-6A
R0421	B-6A
R0422	B-6A
R0423	A-4B
R0429	B-6A
R0430	B-6A
R0431	B-6A
R0432	B-6A
R0434	B-6A
R0450	B-4A
R0501	A-4C
R0502	B-4C
R0503	B-4B
R0504	B-4B
R0505	B-4C
R0506	B-4C
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R0630	B-4E
R0631	B-4E
R0632	B-4E
R0633	B-4E
R0634	A-6B
R0635	B-6B
R0636	A-6B
R0637	B-6D
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R0707	B-8F
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R0717	A-7F
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R0855	A-8B
R0856	A-8A
R0857	A-8B
R0859	B-8C
R0860	B-8C
R0861	A-8B
R0862	A-8B
R0863	A-8C
R0864	B-8E
R0865	B-8E
R0866	A-7C
R0867	A-7C
R0868	B-7C
R0869	B-7C
R0870	B-7C
R0872	B-8E
R0873	B-8E
R0874	A-8E
R0875	A-8E
R0877	A-8C
R0878	B-8E
R0879	B-8E
R0885	A-8E
R0886	A-8E
R0887	B-8E
R0889	B-8E
R0892	B-8E
R0893	B-8E
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R0901	B-4F
R0902	B-4F
R0903	B-4F
R0904	B-4F
R0905	A-3E
R0906	B-4F
R0907	A-5F
R0908	B-2F
R0909	B-2F
R0910	A-5F
R0911	A-3F
R0914	B-4F
R0915	B-4F
R0918	B-4F
R0924	B-5F
R0925	B-5F
R0926	B-5E
R0928	B-6E
R0929	B-6E
R0932	B-6E
R0934	B-3E
R0936	B-2F
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R0941	A-5F
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R0946	B-6E
R0947	B-6E
R0948	B-7F
R0950	A-6E
R0952	B-6E
R0953	B-6E
R0955	A-6E
R0956	A-6E
R0957	B-6E
R0959	B-6D
R0960	B-7E
R0964	B-5E
R0967	A-7B
R0968	A-6C
R0969	B-6D
R0970	B-5D
R0972	B-3E
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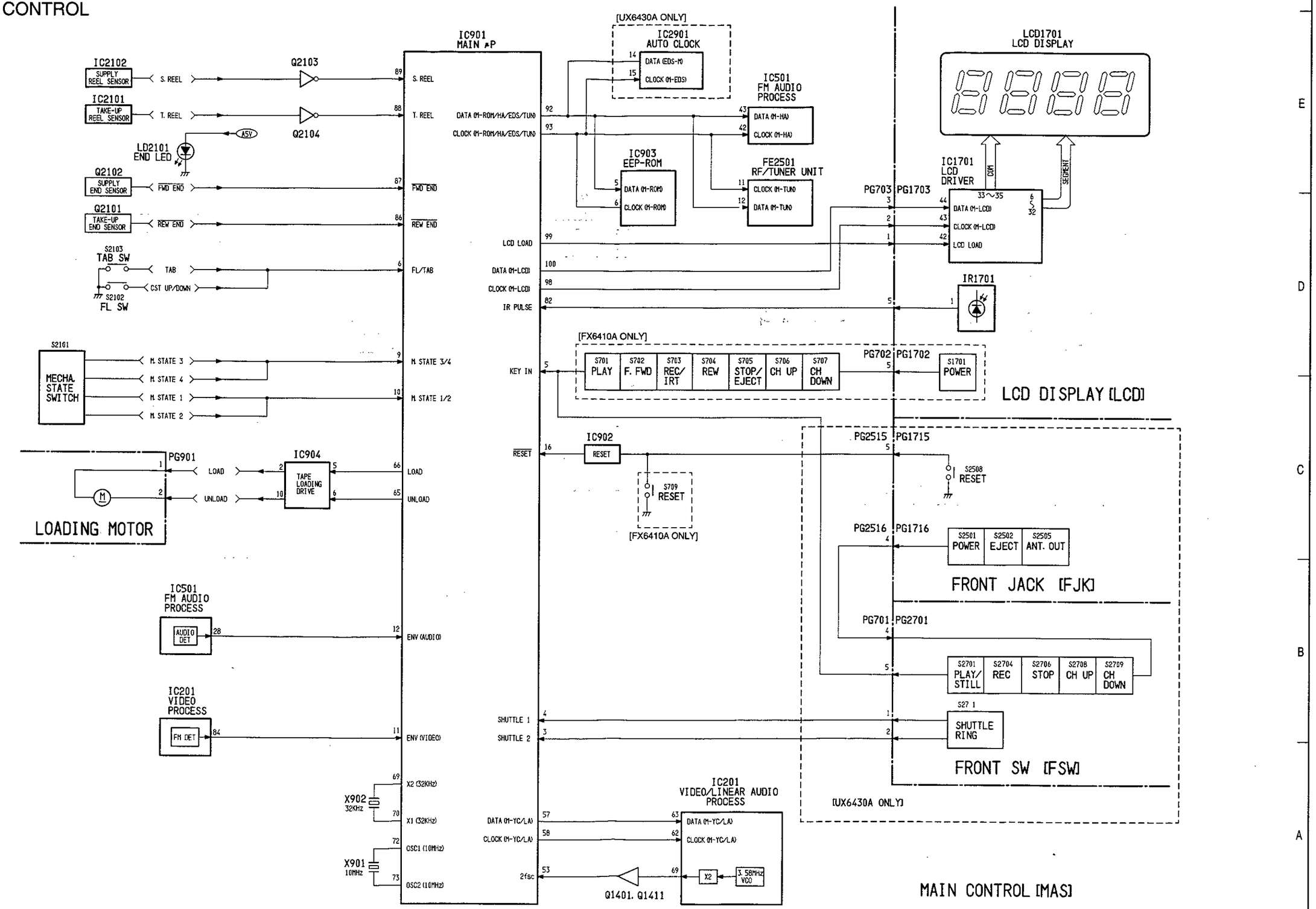
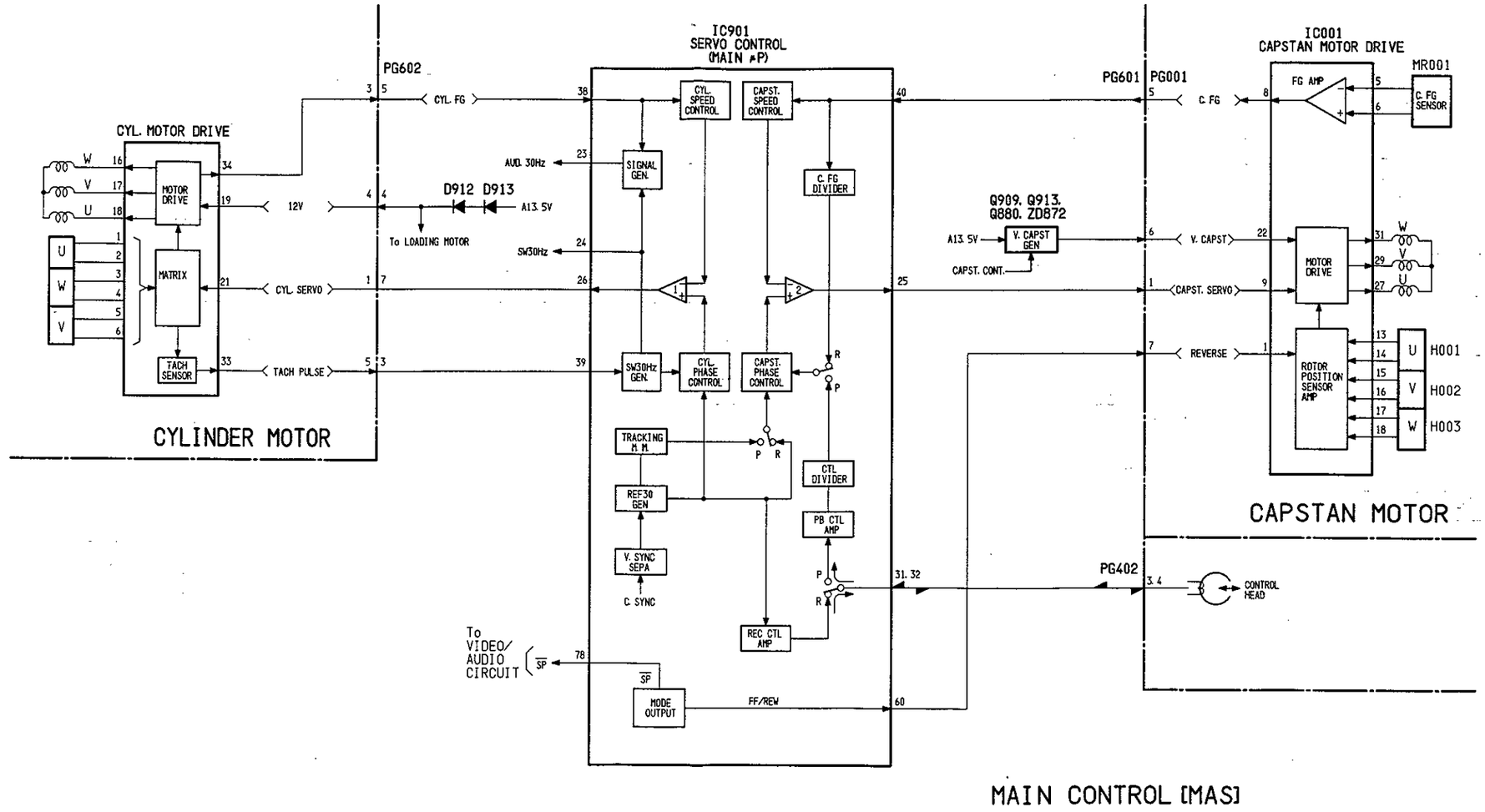
R0977	A-8E
R0978	B-5F
R0983	B-3F
R0984	B-5F
R0985	B-4F
R0986	B-4F
R0989	B-8E
R0991	B-4F
R0992	A-6C
R0993	B-8E
R0995	A-7F
R0996	B-8E
R0997	B-5F
R0998	B-5E
R0999	B-7F
R1103	B-5B
R1120	B-5B
R1403	A-6D
R1405	B-6D
R1406	A-6D
R1407	B-6D
R1409	B-5D
R1410	B-5D
R1412	B-5E
R1414	B-2D
R1416	B-5D
R1418	B-2E
R1430	B-2E
R1433	B-6C
R1434	B-6D
R1438	B-6C
R2101	A-7D
R2102	B-3F
R2103	B-6E
R2104	B-4E
R2105	B-4E
R2106	A-5D
R2107	B-4E
R2108	B-4E
R2109	B-3E
R2110	B-3E
R2111	B-4E
R2112	B-4E
R2113	A-5D
R2114	B-6E
R2115	B-6E
R2116	B-4E
R2117	B-6E
R2501	B-3A
R2502	B-2A
R2503	B-2A
R2504	B-2A
R2507	B-1A
R2508	B-2A
R2509	A-2A
R2510	B-2A
R2511	B-1A
R2512	B-1A
R2514	A-1B
R2524	A-1B
R2525	B-1C
R2526	B-1C
R2529	B-1F
R2534	B-1A
R2536	B-1B
R2542	A-3C
R2544	A-3C
R2546	B-1C
R2551	B-1A
R2552	B-1A
R2553	B-1A
R2554	B-1A
R2901	B-1E
R2903	B-1D
R2904	B-1D
R2905	B-1D
R2906	B-1D
R2907	B-1D
R2908	B-1D
R2909	B-1D
R2910	B-1E
S	
S0701	A-8F
S0702	A-8F
S0703	A-7F
S0704	A-8F
S0705	A-8F
S0706	A-7F
S0707	A-6F
S0709	A-7F
S2101	A-3E
S2102	A-7D
S2103	A-3F
T	
T0401	A-6A
T0851	A-8C
X	
X0201	A-3B
X0901	A-8E
X0902	A-6D
X2901	A-1D
ZD	
ZD0871	A-8E
ZD0872	A-8E
ZD0896	A-8E
ZD0901	A-8F
ZD0903	A-8F
ZD0906	A-5E
ZD2501	A-1B
ZD2502	A-1C

BLOCK DIAGRAMS
1. SYSTEM CONTROL

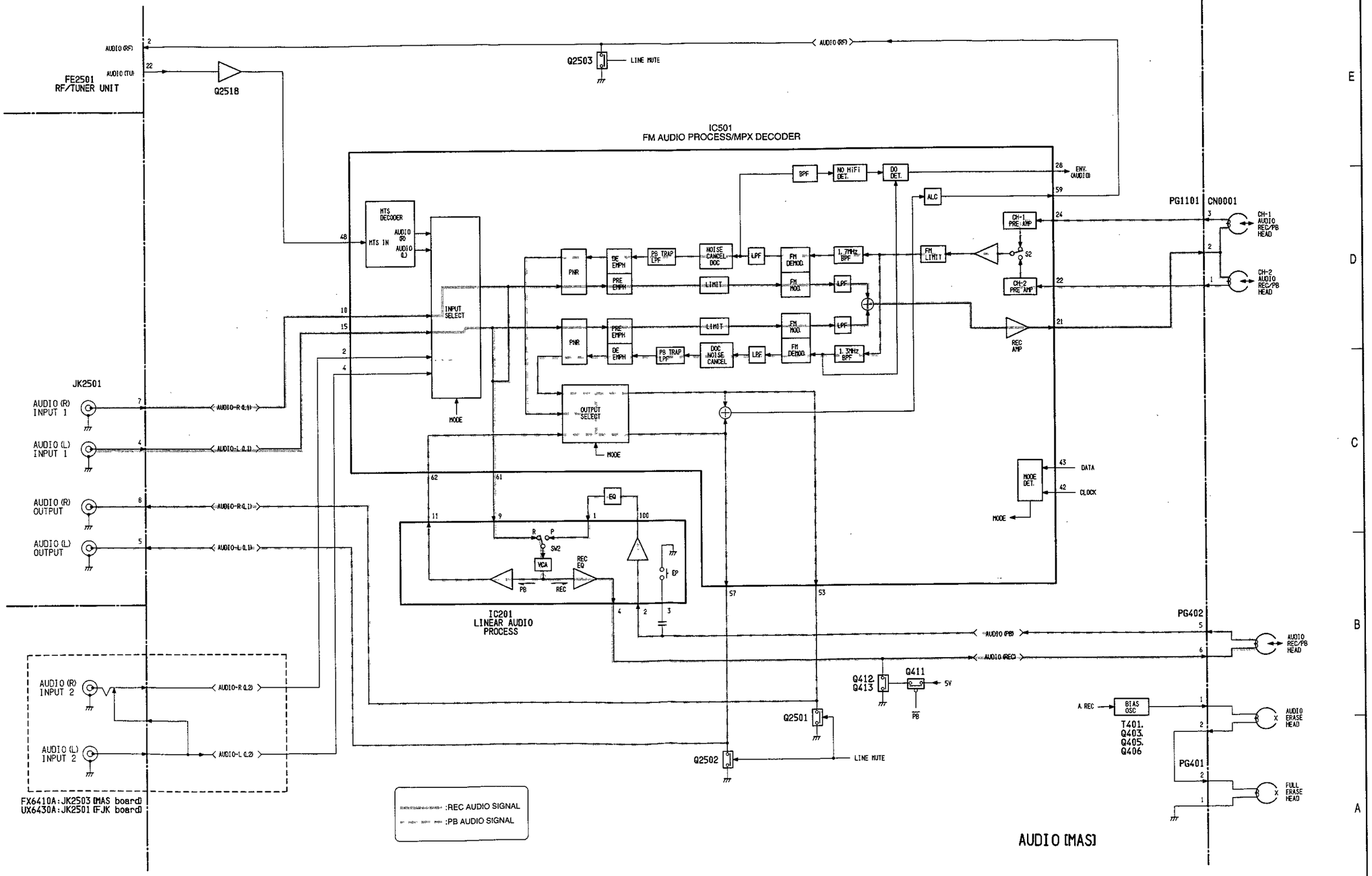


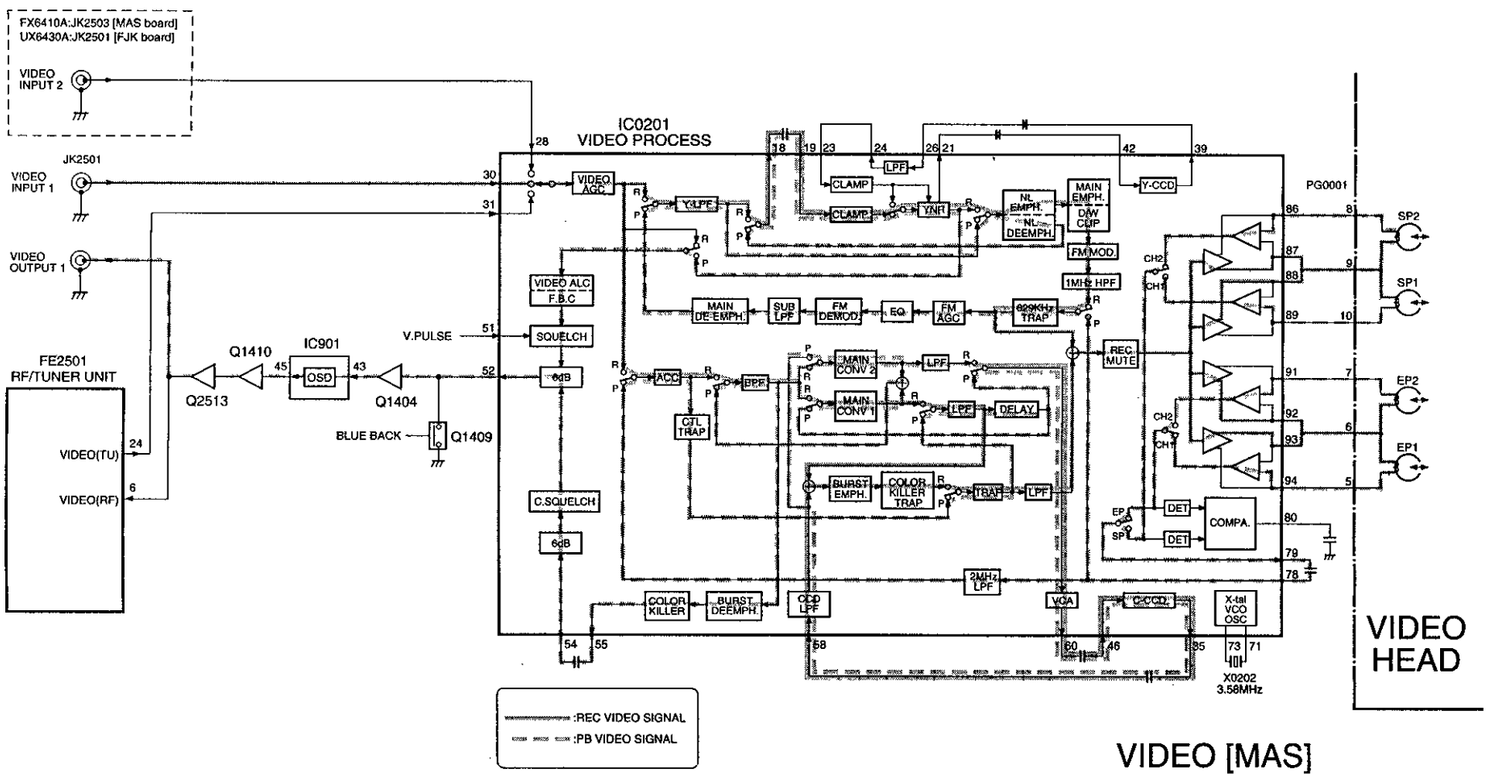
2. SERVO



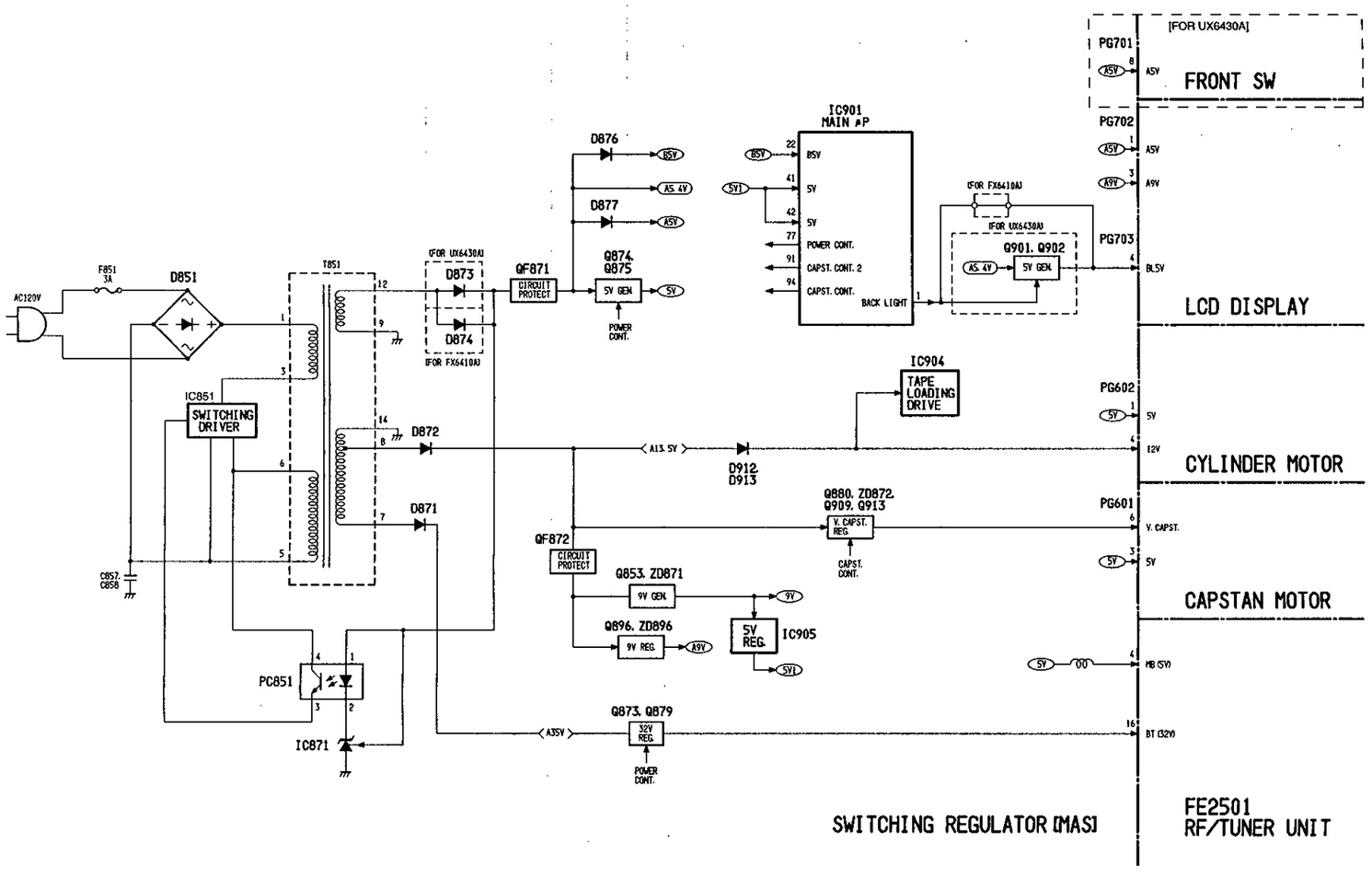
MAIN CONTROL [MAS]

3. AUDIO


FE2501
RF/TUNER UNIT
AUDIO (RF)
AUDIO (TU)
Q2518
Q2503
LINE MUTE
IC501
FM AUDIO PROCESS/MPX DECODER
MTS DECODER
MTS IN
AUDIO (R)
AUDIO (L)
INPUT SELECT
MODE
PNR
DE EMPH
PRE EMPH
PB TRAP LPF
NOISE CANCEL DOC
DOC NOISE CANCEL
LPF
FM DEMOD.
FM MOD.
LIMIT
1.7MHz BPF
1.3MHz BPF
BPF
NO HiFi DET.
DO DET.
ENV. (AUDIO)
ALC
FM LIMIT
S2
CH-1 PRE AMP
CH-2 PRE AMP
REC AMP
OUTPUT SELECT
MODE DET.
DATA
CLOCK
PG1101
CN0001
CH-1 AUDIO REC/PB HEAD
CH-2 AUDIO REC/PB HEAD
JK2501
AUDIO (R) INPUT 1
AUDIO (L) INPUT 1
AUDIO (R) OUTPUT
AUDIO (L) OUTPUT
AUDIO-R (L1)
AUDIO-L (L1)
AUDIO (R) INPUT 2
AUDIO (L) INPUT 2
AUDIO-R (L2)
AUDIO-L (L2)
FX6410A:JK2503 (MAS board)
UX6430A:JK2501 (FJK board)
IC201
LINEAR AUDIO PROCESS
EQ
SW2
VCA
REC EQ
PB
REC
EP
Q2501
Q2502
Q411
Q412
Q413
5V
PG402
AUDIO (PB)
AUDIO (REC)
AUDIO REC/PB HEAD
A. REC
BIAS OSC
T401.
Q403.
Q405.
Q406
AUDIO ERASE HEAD
PG401
FULL ERASE HEAD
:REC AUDIO SIGNAL
:PB AUDIO SIGNAL
AUDIO (MAS)



VIDEO [MAS]



SWITCHING REGULATOR [MAS]

◆ Microprocessor Pin Function Tables

1. LCD DRIVER (IC1701)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	Pulse	SEGMENT 1 [S1]	LCD segment control outputs.
2	O	Pulse	SEGMENT 2 [S2]	
I		I	I	
I		I	I	
I		I	I	
31	O	Pulse	SEGMENT 31 [S31]	
32	O	Pulse	SEGMENT 32 [S32]	
33	O	Pulse	COM1	LCD common (COM) control outputs.
34	O	Pulse	COM2	
35	O	Pulse	COM3	
36	I	Lo	RESET(L)	Initializes the LCD-uP when power is supplied.
37	I	Hi	VDD	A5V power input.
38	I	-	VDD 1	LCD drive bias.
39	I	-	VDD 2	LCD drive bias.
40	-	Lo	VSS	Ground.
41	I/O	-	OSC	Generates a 32kHz signal for key scanning.
42	I	Lo	LCD. LOAD (L) [CS]	LOAD signal between the M-uP and LCD-uP. "Lo" input enables chip select.
43	I	Pulse	CLOCK (M-LCD) [CK]	The data transferred from the M-uP, synchronized with the clock signal.
44	I	Pulse	DATA (M-LCD) [DI]	

2. MAIN uP (IC901)

Pin No.	I/O	Active Level	Abbreviation	Function
1	O	Hi	BACKLIGHT	LCD backlight switching signal.
2	-	-	GND	Ground.
3	I	A/D	SHUTTLE 2	Inputs from the shuttle dial switches. The shuttle speed and direction are determined.
4	I	A/D	SHUTTLE 1	
5	I	A/D	KEY IN	Key matrix input.
6	I	A/D	FL/TAB	Cassette position/erase prevention tab detection input. Hi: TAB SW OFF (with tab), Mid: TAB SW ON (without tab), Lo: When cassette is being inserted/ejected. When a cassette without its erase prevention tab is inserted, recording is inhibited, and when the timer is programmed, it is ejected automatically.
7	I	Lo	P. STOP(L)	When A5V voltage drops and "Lo" is input, the M-uP detects that a power failure has occurred.
8	I	Hi	S-CURVE	Detects the AFT (S-CURVE) signal from the IF unit to fine tune to a station.
9	I	A/D	MODE 2	The signals which detect the mechanism state are input to control the loading motor.
10	I	A/D	MODE 1	

Pin	EJECT	UNLOAD	REV.	R. SLOW	SLOW	R/P	STOP2	FF/REW
13	0	2.5	1.8	2.5	3.05	3.05	2.5	0
14	1.8	3.05	0	0	0	1.8	2.5	3.05

11	I	A/D	VIDEO ENV.	Audio and video envelope level inputs for autotracking.
12	I	A/D	AUDIO ENV.	
13	I	A/D	MODEL SW	Model switching control.
14	I	H/MH/ ML/L	MTS MODE	Hi: Stereo + BIL. + SAP signal input, Mid low: Stereo signal input, Mid high: BIL. + SAP signal input, Lo: Mono signal input.
15	I	-	A5V	Connected to A5V.
16	I	Lo	RESET (L)	Initializes the M-uP when power is supplied.
17	I	Hi/Lo	STEREO/MONO	STEREO/MONO switching mode. Hi: STEREO, Lo: MONAURAL
18	O	Pulse	LOCK	Tuning pulse singnal output for -1.25M, -2M, +0.75M, +2MHz frequency.
19	O	Hi	REC LED	REC indi. control output. REC;Hi
20	O	Lo/Hi	CONV.CH-3/CH-4	CH-3/CH-4 switching control signal output.
21	O	Lo/Hi	TV(Lo)/VCR	RF converter (VCR/TV switching) control signal output.
22	I	-	B5V	Connected to Backup5V.
23	O	Pulse	SW30Hz-A	Head switching pulse output for audio circuits.
24	O	Pulse	SW30Hz	Head switching pulse output for video circuits.
25	O	PWM	CAPST. PWM	Cylinder and capstan motor servo control outputs.
26	O	PWM	DRUM. PWM	
27	O	Hi	V.PULSE	Artificial V sync signal for trick play.
28	O	-	-	Not used.
29	O	-	-	Not used.
30	I	-	-	Not used.
31	I/O	Pulse	CTL (+)	CTL signal input/output.
32	I/O	Pulse	CTL (-)	
33	-	-	GND	Ground.
34	I	Pulse	CTL AMP 1	CTL amp inputs.
35	I	Pulse	CTL AMP 2	
36	I	Pulse	CTL AMP 3	
37	O	Pulse	CTL AMP(O)	CTL amp outputs.
38	I	Pulse	DRUM.FG	Cylinder FG (CYL.FG) pulse input. Controls the cylinder speed during recording and playback.
39	I	Pulse	TACH PULSE [DRUM.PG]	Tach pluse input. Comparison(feedback) signal which controls the recording cylinder phase.
40	I	Pulse	CAPST.FG	Capstan FG (CAPST.FG) pulse input. Used to control the capstan motor.
41	I	-	S5V (SRV)	Connected to 5V.
42	I	-	S5V (OSD)	Connected to 5V.
43	I	-	C.VIDEO IN	Video signal input.
44	I	-	V.REF	Reference voltage of analog circuits.
45	O	-	C.VIDEO OUT	Video signal output.
46	-	-	CHARA. BIAS	Not used.
47	-	-	AFC LPF	An LPF is attached externally for AFC.
48	-	-	AFC OSC	Oscillator for AFC.
49	-	-	GND	Ground.
50	I	Pulse	DOSC IN	OSD dot clock oscillator.
51	O	Pulse	DOSC OUT	
52	O	Pulse	2 fsc (7.16MHz)	These generate a 7.16MHz signal as the clock signal for the OSD and servo circuit.
53	I	Pulse	2 fsc (7.16MHz)	
54	I	Pulse	C.SYNC	Composite sync signal input. Controls the cylinder speed during recording.
55	O	Hi	BLUE BACK	Blue background control signal output.
56	O	Hi	HiFi REC	Set the Hi-Fi audio circuit to the recording mode.
57	I/O	Pulse	I2C DATA	Common communication lines with VIDEO/LINEAR AUD. ICs; data is transferred, synchronized with the clock signal.
58	O	Pulse	I2C CLOCK	
59	O	Lo	PB(L)	Sets the video circuit to the playback mode.
60	O	Hi	REVERSE	Sets the drive direction of the capstan motor to reverse.
61	O	Hi	AUDIO REC	Sets the linear audio circuit to the recording mode.
62	I	Pulse	CTL RESET	Applies reset pulses to the CTL amp during slow and reverse slow play.
63	O	Hi	LM CONT.	Signal to control the voltage applied to the loading motor when forward slow is switched to reverse slow and vice versa.
64	I	Lo/Hi	2/4 fsc	2fsc/ 4fsc switching singal input for OSD. Hi: 4fsc, Lo: 2fsc
65	O	Hi	UNLOAD [LM2]	Loading motor drive signals which set the mechanism to the commanded mode.
66	O	Hi	LOAD [LM1]	

	STOP	LOAD	UNLOAD	BRAKE
LM1(LOAD)	L	H	L	H
LM2(UNLOAD)	L	L	H	H

67	O	Hi	MTS MUTE	Tuner audio muting control.
68	-	-	TEST	Ground
69	I	-	X 2(32kHz)	These generate a 32.768kHz signal as the clock signal for the VCR's clock.
70	O	-	X 1(32kHz)	
71	-	-	Vss	Ground
72	I	-	OSC 1(10MHz)	These generate a 10MHz signal as the system clock signal in modes other than back-up.
73	O	-	OSC 2(10MHz)	
74	O	Hi	LINE MUTE	Audio output muting control.
75	O	Hi/Lo	CAPST. Q.R	Cylinder and capstan motor phase control outputs.
76	O	Hi/Lo	DRUM Q.R	
77	O	Hi	POWER CONT	Power on/off control. When the power switch is operated, a cassette is inserted or a power failure is detected, the internal power supply is switched to be on/off.
78	O	Lo	SP(L)	Tape speed output.
79	O	-	END LED	Not used.
80	O	Hi	TIMER LED	TIMER indi. control output. TIMER standby: Hi
81	-	-	-	Not used.
82	I	Pulse	IR PULSE	Receives the remote control code from the infrared receiver and sets the VCR to the specified mode.
83	O	Lo	-	Not used.
84	O	Lo	-	Not used.

<table>
<tr><th>Pin No.</th><th>I/O</th><th>Active Level</th><th>Abbreviation</th><th>Function</th></tr>
<tr><td>85</td><td>I</td><td>Pulse</td><td>LINE21</td><td>EDS LINE 21H pulse input.</td></tr>
<tr><td>86</td><td>I</td><td>Lo</td><td>REW END (L) [EST]</td><td rowspan="2">When "Lo" is input from the mechanism sensor, the current mode is released. Two sensors detect the two ends of tape. When "Lo" is input from both sensors, the M-uP detects that a cassette is not loaded in the VCR.</td></tr>
<tr><td>87</td><td>I</td><td>Lo</td><td>FWD END (L) [ESS]</td></tr>
<tr><td>88</td><td>I</td><td>Pulse</td><td>T.REEL</td><td rowspan="2">Calculates the period of the take-up reel pulse to detect whether or not slack tape is taken up on the reel. If slack tape is not taken up, the M-uP stops the mechanism. The supply reel pulses are used with the take-up reel pulses to calculate the tape remaining time.</td></tr>
<tr><td>89</td><td>I</td><td>Pulse</td><td>S.REEL</td></tr>
<tr><td>90</td><td>I</td><td>Lo</td><td>CHECK</td><td>Checks short-circuits in the 5V/9V power supplies. (This pin goes "Lo" normally when power is off.)</td></tr>
<tr><td>92</td><td>I/O</td><td>Pulse</td><td>I2C DATA</td><td rowspan="2">Common communications lines with the ROM/Hi-Fi AUD/EDS/UV-Tuner data is communicated, synchronized with the clock signal.</td></tr>
<tr><td>93</td><td>O</td><td>Pulse</td><td>I2C CLOCK</td></tr>
<tr><td>91</td><td>O</td><td>Hi/Lo</td><td>V.CAPST 2</td><td rowspan="2">This is output in the slow, still, playback, recording, fast forward and rewind modes to control the voltage applied to the capstan motor.
FF/REW mode
<table>
<tr><th></th><th>V.CAP 2 (Pin91)</th><th>V.CAP (Pin94)</th><th>V.CAP</th></tr>
<tr><td>S.L Accel</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
<tr><td>EP x1 or below</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
<tr><td>EP x1 - SP x6</td><td>Lo</td><td>Hi</td><td>9.5V</td></tr>
<tr><td>SP x6 or higher</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
<tr><td>Slow FF/REW</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
</table>
REC/PB/SRCH mode
<table>
<tr><th></th><th>V.CAP 2 (Pin91)</th><th>V.CAP (Pin94)</th><th>V.CAP</th></tr>
<tr><td>x1</td><td>Hi</td><td>Hi</td><td>7.5V</td></tr>
<tr><td>x3 - x5</td><td>Lo</td><td>Hi</td><td>9.5V</td></tr>
<tr><td>x7</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
</table>
SLOW mode
<table>
<tr><th></th><th>V.CAP 2 (Pin91)</th><th>V.CAP (Pin94)</th><th>V.CAP</th></tr>
<tr><td>BRAKE</td><td>Lo</td><td>Hi</td><td>9.5V</td></tr>
<tr><td>SP ACCEL</td><td>Lo</td><td>Lo</td><td>13.5V</td></tr>
</table></td></tr>
<tr><td>94</td><td>O</td><td>Hi/Lo</td><td>V.CAPST</td></tr>
<tr><td>95</td><td>O</td><td>Lo</td><td>-</td><td>Not used.</td></tr>
<tr><td>96</td><td>O</td><td>Lo</td><td>-</td><td>Not used.</td></tr>
<tr><td>97</td><td>-</td><td>Lo</td><td>-</td><td>Not used.</td></tr>
<tr><td>98</td><td>O</td><td>Pulse</td><td>LCD CLOCK</td><td rowspan="2">Communication lines with the LCD DRIVER; data is transferred, synchronized with the clock signal.</td></tr>
<tr><td>100</td><td>O</td><td>Pulse</td><td>LCD DATA</td></tr>
<tr><td>99</td><td>O</td><td>Lo</td><td>LCD CE(L)</td><td>LOAD signal between the M-uP and LCD DRIVER.</td></tr>
</table>

HITACHI

VT-UX6430A/FX6410A

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